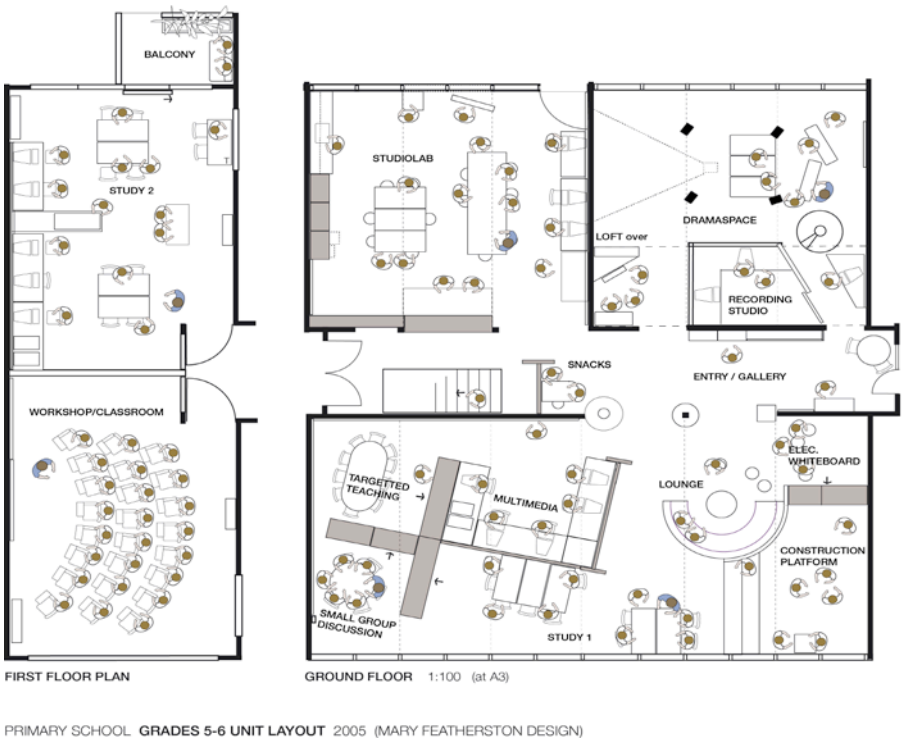
Collective Inquiry: Using cultural-historical theory as a methodology for educational reform



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Declaration

I hereby declare that the preparation of this thesis contains no material which has been previously accepted for the award of any other degree or diploma at any university or equivalent institution and that, to the best of my knowledge and belief, it does not contain any material previously published or written by another person, except where due reference is made in the text of the thesis.

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Abstract

This thesis has analysed how a community of learners in an educational institution enacted a contextual, participative model of pedagogical reform within a government primary school in Melbourne, Australia. I examined how participants developed a community of pedagogical practice, considering the elements of this practice and the ideal conditions that created and sustained the practice. I theorised the practice through analysing the working conditions and the interaction of the pedagogical practices including: the relationships of the participants; the participation structures within the school; the purpose and intent of the programs and organisation of the school; the relationship between the children's lives and the school curriculum; the motives of the children to engage in the school culture, and the development of the children within the social context of their peers. The findings identified the dialectical relations between the theoretical beliefs and pedagogical practices and also how the children, parents and teachers were 'transformed through participation' at the school.

The objectives and research questions of the study were underpinned by cultural-historical theory. The study's interpretive research paradigm was centred on relativist ontology, a socio-cultural epistemology and a participative and collaborative methodology involving full participation of myself the researcher in the activities of the researched community. Qualitative research methods included, case study and practice developing research. The research was situated in the context of the activity that facilitated development of representations of that world and an interpretation of the findings in terms of the actions enacted by the participants, using a perspective based on cultural-historical theory. The data analysis process involved use of Rogoff's (2003) socio-cultural analysis of human

activity with its three foci of analysis, the personal (participation), interpersonal (collaboration) and institutional (community, context).

The essence of the findings was that the whole is not a matter of the sum of its parts, rather the elements of the community of practice and an interplay of concepts together create their own properties and functions that I have termed, '**Collective inquiry'**. Through analysis, the model developed outlined the theoretical understandings of the interactions of the participants, organisational structures of the institution and the dialectic of transformational learning and development of the individual and the culture. The model of inquiry acts as a research approach enabling agency for all participants within the wholistic dialectical system of 'Collective Inquiry' resulting in the growth of knowledge and the person. This research also involved the description of other integrated newly identified elements within "Collective Inquiry' defined as: 'co creating curriculum', 'contextual cultural research', 'imitation through teachers and children engaging with experts', 'mental construct of learning to learn', 'motives – play, learning and social (Years Prep -Six)','reciprocal positioning (Kravtsova 2008a)- above, below and beside by both student and teacher' and 'theoretical knowledge built from narrative and empirical knowledge within inquiry'. These findings together have developed a cultural historical methodology for educational reform.

Chapter 1
Introduction

> "The way to understand (develop knowledge) is the need to participate in this dynamic – not as a matter of logical deduction or imposition – but to respect that a living practice is responding to many conditions and demands, and that these must be understood through participating in that practice and developing solutions that respond to those conditions." (Chaiklin 2006, p.14)

1.1 Introduction

This complex study takes readers on a journey moving through time and space in order to fully explore the subject material and come to a new understanding of an aspect of the educational experience they may never have considered before. The complex narrative requires delving deeply into multiple elements of the practice within one educational institution in Melbourne, Australia, locating these elements within a wholistic account of the context of the institution and its history so as to better understand them theoretically.

This has been achieved through the process of "practice developing research" (Chaiklin, 2006), a methodology involving a wholistic approach to understanding the entity under study, with all aspects needing to be considered along with their interconnections. Indeed, the phenomenon is considered to be a result not of each of these aspects but of the interrelationships between them. The research must thus take place in practice, involving the whole practice as the focus of research, with the goal to develop an understanding of the dynamic interactions between the participant's activity and the interrelationships in which the activity is achieved. The intervention is based upon an identified need to theorise the practice. The research is focused on the improvement of conditions for education within an institutional

setting, requiring the reflection on the whole process, which can only be achieved through full interaction in the process. My role as the participant researcher is to initiate and sustain dialectic interactions which realise the conditions of learning and to align the practice with the identified theory, Cultural Historical Theory.

I have chosen a dialectical methodology (Hedegaard, 2008b) because as a pedagogical leader in the research site, my depth of knowledge as a participant of the institutional practices has enabled the necessary conditions for theorising practice. If we can theorise why we enact our practices within educational institutions, we will better identify the necessary understandings for a relevant educational system for our current culture and society.

In this chapter I begin by outlining my motivation for undertaking this educational research, a story that began many years ago as an 'aha' experience during my own involvement as a student within the education system of Australia. This is followed by a summary of the various phases of the study, including the development of the research questions. The chapter finishes with an outline of the chapters of this thesis.

1.2 Motivation for this Study: Three Personal Experiences

I attended a traditional primary school in the late 1960s. In Year 5 my teacher tried an alternative practice, teaching collaboratively with a colleague, and creating a curriculum that was engaging, involving the use of puzzles requiring lateral thinking and based on purposeful projects such as creating and publishing a story book. These experiences are firmly inscribed in my memory; I also remember the feeling of success and accomplishment at the completion of the activities. I have a vivid memory of sitting down and sharing the book I had created with my father, an authentic audience for my work. These memories stand out in my thoughts

of my primary school years as distinct from the laborious tasks competed throughout the other years. The experience was different because I saw myself here differently as a learner; I felt I was a creative, competent learner and this 'aha' experience as a child led me to want to learn more.

I was fortunate to attend a new high school in 1971, whose curriculum was contemporary and teaching structure based on building relationships. In Year 7 I had two core teachers, one for mathematics and science sessions and the second for English and humanities subjects. The curriculum, particularly in English and humanities, was once again project-based, providing a purposeful, relevant, engaging curriculum. I thrived in this setting. My confidence as a learner continued to grow as did the basic skills I needed to engage with the material I was studying and also my independence and initiative as a learner. These personal experiences provided me with the understanding that a successful alternative education approach was possible.

Throughout my teaching career, I continued to explore innovative approaches to my practice. I was committed to making the experiences for my students relevant, positive and meaningful. In my first year of teaching I used integrated studies and process writing as strategies for optimising student learning. Due to the large class sizes a teacher would come in to team teach with me during some sessions. From my third year of teaching I sought to team teach within double classrooms. The focus of this approach was on differentiating the program for students and also on developing collaboratively engaging projects. In my final years as a classroom teacher with the students and my colleague I remember transforming the corridor into a simulated rain forest, creating the smells, sounds and textures of a rainforest, which was explored by all the other classes within the school, with great delight, and also as a meaningful, engaging learning opportunity. For a few years I became an art, science and

technology and gifted and talented students teacher. The areas of art, science and technology led to a focus on the development of creativity and design briefs with students. The work with gifted and talented children led – on my part – to postgraduate study in this area resulting in my awareness of the need to be able to provide differentiated, meaningful learning experiences for all children, developing them to their potential. The work with groups of children (described at the time as mixed ability groups) such as for the RACV Energy Breakthrough, Tournament of the Minds and State Science Talent Search demonstrated the developmental potential of all children as they worked collaboratively with mentors in meaningful learning environments. A focus became the Betts Autonomous Learning Model and I travelled to Colorado, USA to experience this approach first hand. The approach brought more autonomy to the children in their learning experiences. *These experiences led to the collaborative development of the learning complexes* [1]*within the school, which are the focus of the case study.*

The birth of my own children brought a new motive to my work. In searching for an early learning centre for my first child, I became aware of the Reggio Emilia Project and my children attended a center based on an experiential, project based approach. This experience led to my study of the Reggio Emilia approach, and a visit to Reggio Emilia, Italy and the Collaborative schools in St Louis Missouri, USA (see Chapter 3). My first son was a student at the case study school, experiencing school within the learning complexes throughout his

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[1] Learning Complexes – a large area comprising multiple purpose designed learning spaces shared by a large group of children with multiple teachers.

primary years of schooling. My experience as an assistant principal and a parent within the school enabled me to review this approach to teaching and learning through multiple lenses.

I believe it was the combination of these personal experiences that led me towards embarking on educational research to try and capture the essence of what was successful about these approaches and to be able to share this analysis with fellow educators. My master's degree study was focused on leading change in education, examining the challenges that systems and school leaders faced in bringing about change in education. However I decided that the best way for me to make a positive contribution to creating the change needed within the system was to engage in ongoing collaborative action research to analyse and theorise the practices within the case study school, which I had spent twenty-five years in creating through ongoing collaborative action research. The rest of this thesis explains how I used this cultural-historical study to attempt to achieve this aim. Interestingly, in becoming a principal of another school in 2009, I am now in the process of putting what I now know into practice. However that is a story for another time.

1.3 Outline of the Study

1.3.1 Purpose

The case study school provided an opportunity and a motive to explore the conditions that were enacted within the government primary school implementing a contextual, participative, community model of pedagogical reform.

The reason for this case study was also that it provided an opportunity to investigate and develop an awareness of the theoretical concepts that could explain the interactions of the elements identified.

Thus the purposes of my study were to:

- analyse how the community of participants in an educational institution enacted a contextual, participative model of pedagogical reform within the requirements of a government primary school;
- examine the challenges of pedagogical reform to see if and how the practices were embedded within community values;
- explore the system of pedagogical elements which together combined to enact the practice, and
- theorise practice through identifying working conditions which contributed to developing theoretically motivated ideas and practice.

1.3.2 Aims

The study aimed to examine how participants within a government school develop a community of pedagogical practice considering the elements of this practice and the ideal conditions that create and sustain the practice.

The research also sought to document and analyse the ideal conditions governing the practice and to explain and theorise the relationship between the interrelated elements of interpersonal relationships, institutional practices and personal learning and development.

1.3.3 Objectives

To investigate the system of pedagogical elements of the case study school in order to understand:

1. The relationships of the participants within the school;

2. The participation structures within the school;
3. The purpose and intent of the programs and organisation of the school;
4. The relationship between the children's lives and the school curriculum;
5. The motives of the children to engage in the school culture, and
6. The development of the children within the social context of their peers.

1.3.4 Research questions

In order to realise these aims and objectives it was important to develop a set of research questions that would drive and sustain the complex and multifaceted study of school reform.

Main Research Questions:

What underpinning theoretical beliefs and pedagogical practices are in play in a contextual, participative, community model of pedagogical reform, enacted in a government primary school in Victoria, Australia?

What are the dialectical relations between theoretical beliefs and pedagogical practices enacted in one government school undertaking educational reform?

How are children, parents and teachers being 'transformed through participation' at the school?

Seeking answers to the identified research questions involved analysis of:

- concepts related to contemporary pedagogical practice, and
- concepts related to theoretical education beliefs.

The key concepts within the main research questions were then further elaborated through a series of supplementary questions.

Supplementary questions:

How does the interplay between children's scientific and everyday concepts occur as a result of the beliefs and practice as presented in the school's philosophy?

In what ways did the learning projects selected for investigation create a double move?

How are the school's principles of negotiated curriculum and collaborative program planning related to the children's social situation of development?

What is the relationship between the participation structure and motive development?

An examination of the contemporary pedagogical practice and theoretical education beliefs demonstrated within these practices in the case study school, provided the opportunity to find answers to the research questions posed in this study.

1.4 Summary of the Phases of this Study

1.4.1 The beginnings

Research in education is often informed by theory, however the theory can at times be implicit and not readily visible. According to Chaiklin (2006) for educational research to impact effectively upon practice, it needs to be aligned to an authentic context within the complexity of the system of elements. These interact to enable the process of education and constitute the variables that differentiate one education institution from another, such as contextual and cultural characteristics, and participant characteristics. The study of these processes was

challenging and presented difficulties firstly in understanding the complexity of the elements and their interplay within the specific context, and later in maintaining the complexity in the interpretation of the practice as aligned to motives and theory. The challenge I was about to embark on became crystal clear as I sat in one of my first meetings at the university with fellow researchers and academics. Having just come from a meeting of school principals, it felt as though I was now living in two different unconnected worlds, one an institution of theory (the university) and one of the practicalities of practice (the school education system), with neither world effectively informing or influencing the other.

The initial intention of this research was to unpack the practices within the school and determine the beliefs of the participants, including my own for enacting these practices within a government education department system. Consequently, the literature review was guided by the main research question:

What underpinning theoretical beliefs and pedagogical practices are in play in a contextual, participative, community model of pedagogical reform, enacted in a government primary school?

Theorising the practices of education became an epic journey beginning with examining the theoretical perspective currently guiding education practitioners, specifically behaviourist and constructivist theories. With a critical and sceptical mind, I also began exploring cultural-historical theory.

I came to realise that this unexpected challenge of exploring what was a new conceptual interpretation of learning and development for me, would lead to a new opportunity for my

own development, resulting in a greater level of understanding than that which I had ever imagined.

1.4.2 Stage 1

During the period of my PhD research I studied the concepts of cultural-historical theory intensively by reading the works of Vygotsky, including developing a conceptual understanding of the zone of proximal development and scientific and everyday concept formation. I also studied the contemporary socio-cultural theory work of Rogoff, in particular the concepts of her three lenses of analysis, transformation through participation and intent participation, now bringing my own purpose to lectures I had heard from her a few years earlier. I also intently studied Hedegaard and Chaiklin's (2005), "Radical Local Theory" and Chaiklin's (2006) concept of "Practice Developing Research". I was fortunate to spend a week with them during their time at Monash University as visiting academics (See Chapters 2 & 3). Finally I examined other models of curriculum development and school reform, and compared and contrasted these approaches in relation to their theoretical basis. The following questions were then added:

How are children, parents and teachers being 'transformed through participation' at the school?

Sub questions:

How does the interplay between children's scientific and everyday concepts take place as a result of the beliefs and practice inherent in the school's philosophy?

In what ways did the learning projects selected for investigation creating a double move?

These insights into cultural-historical theory enabled me to prepare my study proposal and in particular achieve ethics approval, with a study design based on cultural-historical principles of participant researcher, community participation in the research, such as in the role of interviewers and involving the principles of practice developing research (see Chapter Four). The examination of the theory also revealed that the central tenet of this research study was that learning and development is a transformation through participation within a social and cultural context. This is the case for all the participants who formed the community of learners at the case study school – children, parents, family members, teachers and mentors. Participative transformation is conceptualised as the interactions between the participants leading to the development of the institution itself.

I sought approval from the Principal to complete the research within the school and discussed with staff the possibility of their involvement in the research. Following a few clarifying questions, participants in the three year levels which I was interested in researching, Years Prep, 3 and 5, agreed to the proposal. I was very conscious that in planning this research project, the possibility of bias was ever present because of my role as a participant researcher and because of my senior role within the school (see Chapter Four).

I completed a review of the cultural historical context of the school in order to understand the conditions for learning as it relates to a school community working in the current global, Australian, Victorian and local context. At a staff conference I presented an overview of theories of learning (see Chapter 2) and my analysis of the key ideas and the related structures within the school. The document created within this analysis (Table 5.1) has been subsequently used by the school to document its teaching and learning organisational structures.

1.4.3 Stage 2

The data collection stage involved a series of group interviews with the participants. I led the teacher group interview. However, I trained parents and children to lead the parent and children's interviews with the goal of enabling authentic, open dialogue. These interviews were followed up by observations within the learning complexes. I collected artifacts from the learning complexes for the period of the 12 months, which included, planning documents, minutes of meetings and documentation of learning. The analysis of these data using Rogoff's three lenses was immense, requiring continual revisiting of the data with coding used to identify themes, concepts and categories. In order to deepen my analysis I used theoretical concepts, such the social situation of development (Vygotsky, 1998; Bozhovich, 2009), motive development (Vygotsky; Leontiev 1978, 2009), learning within the child's zone of potential development, zone of proximal development (Vygotsky, Kravtsova 2008), funds of knowledge (Vélez-Ibáňez & Greenberg, 1992) in play, the concept of the mediating role of the teacher (Siraj-Blatchford 2009), and teachers' use of conceptual and contextual intersubjectivity (Fleer 2010). I again was advantageously able to participate in two further insightful learning opportunities firstly a visiting scholars program at Monash University with Professor Elena Kravtsova and Gennady Kravtsov and secondly a meeting of the authors during the development of the book titled 'Motives in Children's Development – Cultural Historical Approaches' (edited by Hedegaard, Edwards & Fleer, 2012). These experiences led to the examination of further educational practices – Golden Keys schools in Russia and the Developmental School in the Netherlands. Further research questions were also formed:

How are the school principles of negotiated curriculum and collaborative program planning related to the social situation of development?

What is the relationship between the participation structure and motive development?

1.4.4 Stage 3

The analysis and bringing together of the findings was again a challenge due to the complexity of the entity under investigation and the desire to emphasise the importance of the interrelationship of the identified elements. This analysis led to the development of the model (Figure 9.8) combining current theoretical ideas with newly identified conceptual understandings.

The analysis also led to the review of a new area of literature on curriculum theories and approaches, detailing the inquiry approach and the concept of a community of learners in particular. Further theoretical work was undertaken in order to move from Cartesian logic to dialectical logic to inform the direction of the overall study. A further main research question was formed:

What dialectical relations between theoretical beliefs and pedagogical practices are enacted in one government school undertaking educational reform?

This led to the need to define the model of inquiry as theorised in this thesis, leading to the definition, description and theorisation of the methodological approach

Collective Inquiry.

I will now outline the chapters in this thesis.

1.5 Outline of Chapters

Chapter Two of this thesis is the theoretical framework chapter. This chapter is placed before the literature review chapter as it outlines the cultural-historical concepts used throughout this thesis, including those discussed in the literature review. The chapter reviews the theoretical literature in relation to theories of children as learners, beginning with an overview of the theories currently impacting on education, and their influence on the learning by children in school settings. The nature of learning from a cultural-historical perspective is then examined in further detail, outlining the particular meanings of cultural-historical terms. The explanations of the theories of *child development, the social situation of development, concept formation*, and their relationship to *instruction, motive development* and the *zones of development potential, proximal and actual development* are central to understanding this thesis. However these concepts can only be understood within the system of concepts they form part of, and as such they are reviewed together in Chapter Two.

Chapter Three provides a review of the literature in the field of pedagogical approaches to teaching and learning; specifically the theoretical bases of these approaches are examined. This review will show how this study is situated within this literature and demonstrate how the study can make a significant contribution to our understanding in this field. I will begin with a brief overview of the alliance of theory and pedagogical approaches to teaching and learning. I will then examine the history and interpretations of the inquiry approach, in particular the concept of a 'Community of Inquiry', that can be found in the literature, followed finally by a discussion of the literature on schools that have transformed their pedagogical approaches. This includes a small, but growing body of literature using cultural-historical theory to frame research and implementation of contemporary pedagogical approaches. Rather than simply

contributing another description of a teaching and learning approach or program to the literature, this thesis aims to provide a theorisation of a contemporary approach to education within primary schools so that we can understand how and why certain necessary conditions can be created to assist leaders and teachers to conceptually understand and better implement their practice.

Chapter Four outlines the collaborative methodology used in this study, underpinned by cultural historical beliefs. The study's interpretive paradigm (Denzin & Lincoln, 2005) is based on relativist ontology, a socio-cultural epistemology and a participative and collaborative methodology, involving the active participation of community members. My role as a full participant in the case study school is defined. The qualitative research methodology in this case study reflects the teacher's beliefs about learning in the school context. As *Practice Developing Research* it aims to reverse the tradition of moving theory into practice to gaining an understanding of theoretical motivation through participating in the cultural practice (Chaiklin, 2006). The multiple sources of data and the data analysis process, which involved coding to identify themes, concepts and categories including Rogoff's (2003) socio-cultural analysis of human activity, are discussed as the means to analyse the transformative processes within the research site. A discussion on validity and reliability highlights the awareness that the researcher controls the lens through which data are interpreted, and that validity needs to be monitored through construct, internal and external validity processes. Reliability of data is managed through triangulation (Denzin, 1989) and through the theory of crystallisation (Richardson, 2000). The ethical considerations regarding the research of teachers' professional practice and the role of the researcher as participant in the research site are also discussed.

In presenting the methodology in action I describe how the methods outlined were used in this study. Firstly the ethical procedures involved in conducting the research are described followed by the processes used to select the participants. The uses of the data generation methods are then explained. Procedures used for sorting, coding, analysing and presenting the data are also outlined. This chapter concludes by providing an overview of the socio-cultural data analysis, and the data presentation process.

In Chapter Five, in light of cultural-historical theory principles, I detail the context of the case study school examining the history of the development of the practices within the institution and also the cultural elements of the school. This analysis firstly considers the elements impacting on the school from society and the government and secondly provides a description of the school noting the elements of the local community. The participants within the school are described along with the history of the actions taken by the school to transform its practices including the development of pedagogy, physical environment design, professional development and parental involvement.

Chapters 6, 7 and 8 provide details and present data collected from this research through the analysis of the three learning complexes within the school, Year Prep, Year 3 and Year 5/6 learning communities. In Chapter Six I identify the practices within the Year Three learning complex using an interpersonal lens to document and analyse the relationships and interactions enacted in the Year Three learning community leading to the transformation (Rogoff, 2003) of the participants and the institution through their participation in this cultural activity. This process is outlined in Chapter Eight using an institutional lens to analyse the shared learning practices enacted through the development of participation structures (Rogoff, 2003). A personal lens serves to trace the participation of individuals from the perspectives of

development, relevance and motivation. Chapter Eight compares the processes used in the Year Three learning complex with those used in the Year Prep and Year 5/6 learning complexes, in particular highlighting the importance of the concept of the social situation of development and the positioning of participants within the institution.

Chapter Nine draws together all the findings of the thesis and presents a new model representing the theoretical system of concepts essential for creating the effective development of pedagogical practice within a school system undergoing educational reform. A newly defined approach to inquiry learning is also outlined. Suggestions from these findings are discussed and recommendations for future research are made.

1.6 Conclusion

This chapter has outlined the motivation for this specific research study. The diverse phases of the project have been outlined, including the development of the research questions. Finally a summary of the thesis chapters has been provided.

The next chapter specifies the reason for the selected theoretical framework for this research. Vygotsky's cultural-historical theory, and its contemporary development and interpretations are detailed, involving a discussion of the particular meanings of concepts pertinent to this theory. These concepts have been extensively referred to and used throughout this thesis to interpret the literature, inform the research methodology, analyse the data, and to identify, theorise and develop the central concepts of this study.

Chapter 2
Theoretical Framework

2.1 Overview of Chapter

This chapter reviews the theoretical literature in relation to learning theories with a focus on children as learners. The review begins with an overview of the theories currently impacting on education, and their influence on the learning by children in school settings. This very brief account of learning theory sets the context for the research, because the case study school was moving from these theories to more contemporary theory to inform practice. It is beyond the scope of the thesis to give details of the traditional theories of learning. This is followed by a detailed review of cultural-historical theory, exploring the concepts of *child development, the social situation of development, concept formation*, and their relationship to *instruction, motive development* and the *zones of development potential, proximal and actual development.* The concept of motivation for children's participation in learning is considered through Rogoff's theory of *transformation through participation* and *intent community participation.* Her lenses of analysis are discussed regarding their use to examine the learning traditions and activity within the case study school. The concept of *funds of knowledge* that individuals bring, and the community of learners hold and develop are examined. The teacher's mediating role of developing activities using *conceptual and contextual intersubjectivity* is also described. Together, these concepts informed the study design, analysis and presentation of the findings that are given in subsequent chapters.

2.2 Theories of Learning

This first section presents a brief overview of learning theories to plot the evolution of teaching and learning and to examine what is understood about teaching and learning based on

these theories within the practices of education. Each theory is informed by different psychological principles. Vygotsky (1987a, Vol.1) states, "In Brentano's words, the historical condition of our science is such that there exist many psychologies, but no unified psychology. One could argue, indeed, that the development of this multitude of psychologies is a direct function of the absence of a unified psychology" (p.54). Vygotsky talks of a dualism in psychology:

> When psychology takes a step forward in the accumulation of empirical data it consistently takes two steps back in its theoretical interpretation of this material… new and important discoveries… can become bemired in prescientfic concepts which shroud them in *ad hoc*, semi- metaphysical systems and theories. (Vygotsky, 1987a, Vol.1, p. 54)

An understanding of any theory enacted in a teaching and learning program is of high importance, even of theories that form the basis of traditional schooling practice, such as behaviourism.

2.2.1 Behaviourist theory.

The behaviourist theory (Pavlov, 1927; Skinner, 1938; Watson, 1924) is based on the belief that the environment shapes behaviour. Learning is seen as the outcome of a change in observable behaviour. When a stimulus-response pattern is reinforced (rewarded/ punished), the individual is conditioned to respond and a change in behaviour results. Breaking the learning of a task into small parts enables the observation of the achievement of each of these sub-skills. Research methods related to this theory have focused on the investigation of groups of subjects by using controlled manipulative experimental procedures. This brief overview is not inclusive of all the dimensions of this theory, but what is described has been central in informing education in primary schools.

The impact of this theory on teaching and learning is seen in the use of behaviour management by conditioning through rewards/punishments, programmed instruction – for predetermined skills and learning through small steps towards the whole. Learning is based upon a system of previously developed habits. Vygotsky (1997a) critiqued behaviourism as

> inclined to emphasize the role and significance of the organism as a whole, inclined even to see the perspective of behavioural processes as a whole, the essence of the difference between psychological and physiological research…it speaks of instinctive and emotional functions and, in contrast to these, about acquired functions, that is, systems of habits developed and ready to use in appropriate situations. (p.4)

The result is that consciousness of thought is not seen as an important element of learning.

2.2.2 Cognitive theory.

Piaget's (1972) cognitive theory is based on the building of cognitive structures with progress identified through a change in understandings. Patterns of mental functions underlie specific acts of thinking and correspond to stages of child development. Four stages in development were identified. During the *Sensorimotor* stage, 0-2 years, cognitive structure is reflected in the form of motor actions. In the *Preoperational* stage, 2-6 years, cognitive structure is expressed through the use of language, and memory and imagination develops though thinking is non logical and egocentric. In the *Concrete operations* stage, 6-12 years, cognitive structure is logical but depends upon concrete referents. During the Formal *operations* stage, 12 years and on, thinking involves abstractions. The ages for each stage are seen as approximations, but each of the stages must be progressed through in sequence. Biological development drives the movement from one cognitive stage to the next. Cognitive structures change through the processes of *adaptation* involving assimilation where new experiences are interpreted in terms of existing cognitive structure, and *accommodation* where the cognitive structure changes to

make sense of the experience. Learning is seen as being provoked by external situations. This view of student development and learning has been, and still is, very influential in schools today.

The implication of this theory for teaching and learning is that instruction must wait for a certain level of development, thus in-class learning experiences are matched with the child's age and stage of development. Learning is viewed as linear; children will provide different explanations of reality at different stages of cognitive development, so scope and sequence charts are often developed in planning to respond to this belief. The focus is on what is happening inside the learner's head, the internal construction of knowledge, and the understandings being developed. For this to occur, learning must be meaningful and active learning environments are developed to seek student engagement.

In regard to the laws which Piaget established, Vygotsky (1987b) stated, "these laws can only be applied to that social environment which Piaget studied. The comparatively small differences between this social environment and that observed in Germany produced a significantly different pattern of regularities" (p.90). In 1978 this theory was also being problematised by Donaldson's (1978) research which found that when Piagetian tasks were assessed in contextual situations rather than laboratory environments, children were able to complete the tasks at a developmental stage (Formal operations stage) earlier than described by Piaget. Notwithstanding these critiques, Piaget's cognitive theory underpins the central tenets of constructivism.

2.2.3 Constructivist theory.

The focus of constructivist theory (Bruner, 1960; Piaget, 1962) is that humans are seen as proactive meaning makers. The learner transforms information, constructs hypotheses and

makes decisions relying on a cognitive structure to do so. Two views of constructivism exist. Personal constructivism has an intra-personal focus, where knowledge is not transmitted but actively composed by the learner (Driver et al., 1994). Social constructivism focuses on the learner's construction of knowledge in a social context influenced by socially constructed tools and knowledge (Driver et al., 1994). The emphasis in social constructivism is the internal development of knowledge through social interaction.

Teaching and learning approaches based on this theory encourage discovery, problem solving, individual initiative and creative thinking. Tasks are to be intrinsically interesting and the learner is active in making sense of the information and building personal meaning. The teacher is aware of what the student already knows and builds on their knowledge and understanding through *scaffolding* of learning (Wood, Bruner & Ross, 1976). Social constructivism emphasizes learning through collaboration.

Constructivism set out to overcome the mind- body dualism of previous theories, however Phillips (1985) comments that constructivism is problematic in its tendency towards epistemological relativism, including individual and social community relativism. Such divergent views reinforced the very position constructivism was developed to avoid.

2.2.4 Cultural-historical theory / socio-cultural theory.

Cultural-historical theory often named as socio-cultural theory, views cognition as not being an individual construction but rather seeks to " explicate the relationships between human mental functioning, on one hand, and the cultural, institutional, and historical situations in which this functioning occurs, on the other" (Wertsch, del Rio & Alvarez, 1995, p. 3).

Teaching and learning in accordance with this theory has children learn as part of a community with the purpose of engaging in cultural practices, and where learning is authentic. Learning is seen as wholistic, not isolated sub skills. Links are made between the development of concepts in children's *everyday* life and concepts developed in school settings. Learning takes place in social contexts including through collaborative learning. Participants are *transformed through participation* (Rogoff, 2003). These ideas are discussed in greater detail in Section 2.4.

The challenge to Vygotsky's theory lies in understanding how the external world is connected with the individual mind. Lave and Wenger (1991) for example in developing their situated learning theory, contest Vygotsky's concept of internalisation as it includes only " a small 'aura' of socialness that provides input for the process of internalisation, viewed as individualistic acquisition of the cultural given" (p. 47). Investigation of this challenge is key to this research study, which seeks to identify *in what ways children, parents and teachers are being 'transformed through participation' at the school.*

2.2.5 A reflection on theories of learning.

Vygotsky saw instruction and learning as a means to provoke development; instruction would provide opportunities for participation in cultural practices and at the same time develop new psychological functions and relationships between these functions in a system of concepts. In contrast the behaviourist model equated learning and development, and the cognitive model viewed that instruction and consequently learning must wait for the conditions of a developmental level to occur. The constructivist model does not take into account the relationship between cultural practices and the internal psychological functions of the learner.

Viewing theories in isolation and underpinning research and practice with a single theory are subjects of ongoing debate. Nevertheless, given that the cultural-historical approach builds on the knowledge and understandings developed by the other theories it seemed the most appropriate to reflect on the complexity of the act of learning for this study. In the next section I review the main aspects of cultural-historical theory.

2.3 The Origins of Cultural-Historical Theory and Recent Conceptual Development

Socio-cultural theory represents a particular western development of the original cultural historical work of Vygotsky and his Soviet colleagues in the early twentieth century. Their work became accessible to the world when it was translated into English in the late 1970s and has been further developed since then (Bozhovich, 2009; Fleer, 2010; Hedegaard & Chaiklin, 2005; Kravtsova, 2008a; Rogoff 2003; Siraj-Blatchford 2007).

Concepts relevant to this study include: theories of child development; the social situation of development; concept formation, and the relationship of this to instruction; motive development, and the zones of development potential, proximal and actual development. These concepts are discussed in turn.

2.3.1 Child development.

Knowledge is seen as an anticipatory construct for future social activity, not an internalised representation of external reality. Vygotsky saw cognitive development as *mediated* through the child's participation in social activity. Cognition is not an individual construction. Rather it is developed through a child's ongoing interactions in cultural practices. This process is

described by Vygotsky as a relationship between interpsychological functioning and intrapsychological functioning, as follows:

> Every function in the child's cultural development appears twice: first, on the social level, and later, on the individual level: first between people (interpsychological) and then inside the child (intrapsychological). This applies equally to voluntary attention, to logical memory, and to the formation of concepts. All higher functions originate as actual relationships between individuals. (Vygotsky, 1978, p. 57)

Vygotsky acknowledged that children move through phases in their development and that there were "certain developmental prerequisites that must be met before successful instruction can begin" (Vygotsky, 1987a, p. 195). Therefore there is a lower threshold where instruction is not relevant as the child is not able to make meaningful cognitive connections. Vygotsky believed however that this dependency between development and instruction was not the most important characteristic of the relationship between them.

Current research has continued to examine theories of child development; El'konin's (1999) theory focuses on the child's motive and cognitive development within social situations.

> According to El'konin, the child's development is characterized by three periods, each including a motivational and a cognitive stage of development. The first period, the infant and early play period, includes the development of motives for emotional contact, methods for socializing, and situational mastery. The second period includes the age of role play and early school age. This period is dominated by the development of motives for mastery of the adult world and acquisition of analytic methods and related goals and means. The late school and youth period is characterized by the development of motives for social and society involvement and methods for mastery of personal relations as well as work and societal requirements. (Hedegaard, 2005, p.226)

Hedegaard and Chaiklin (2005) put forward the theory that the development from one period to the next is through a short period of crisis. The psychological functions needed for development from one period to the next are formed through engagement in situations when specific actions relevant to the contradiction occur. It is not the activity that develops the child but the engagement in the psychological functions required to achieve the activity (Chaiklin, 2003, pp. 47–48). Hedegaard (2005) views children's activity in everyday life as foundational for their development. Three perspectives are in play concurrently: societal perspectives of norms in development; institutional perspectives where the child lives their everyday lives that combine traditions and practices including school, home and work; and finally children's perspectives, which includes the perceptions the child brings to the situation. Hedegaard (2005) states,

> Children develop through participating in everyday activities in societal institutions, but neither society nor its institutions (i.e. families, kindergarten, school, youth clubs etc.) are static but change over time in dynamic interaction between persons' activity, institutional traditions for practice, societal discourse and material conditions. Children's life and development is influenced by several types of institutional practice in a child's actual social situation. But at the same time children's development can be seen as socio–cultural tracks through different institutions. Children's development is marked by crises, which are created through changes in the social situation. (p. 3)

A child's psychological development is viewed as occurring through their activity in societal institutions, as the child interacts with values of the 'good life' held by society and their own motives and perceptions. The child enters crises when the child's psychological development does not match their biological development or the cultural practices of the societal institutions in which they live. To move on from this period of crisis, psychological development is required. (Hedegaard, 2005, pp. 7–8)

2.3.2 Social situation of development.

The social situation of development is a result of a conflict between the demands of the social context in which the individual is located and the current state of the individual's psychological functions. The individual's current capabilities provide an orientation towards being engaged in the current social context, however an awareness of the lack of capabilities to adequately meet all the demands provides a catalyst for the development of new psychological functions (Hedegaard & Chaiklin, 2005, p.36). The orientation to be engaged in conceptual learning comes from the social situation of development (Vygotsky, 1933/1998, p.198). The demands and values of this situation can influence aspects of both the individual and the social situation. From the perspective of the child it is how the child emotionally experiences the activity and from the perspective of the institution it is how the activities take place in recurrent activity settings (Hedegaard, 2009). Bozhovich, (2009, p. 60) states,

> Child mental development is a complex process that cannot be understood without analysis not only of those objective conditions influencing children but also features that have already taken shape in their minds and through which the influence of these conditions is refracted… Child mental development has its own internal logic, its own law, and is not a passive reflection of the reality within which this development takes place (p. 60).

Bozhovich (2009) outlines two conditions which determine the child's position within a social cultural environment,

> Children's positions are determined by two conditions: first by the demands of the social environment that have developed historically and are placed on children of a particular age (from this perspective we can talk about the position of the preschooler, the schoolchild, the working adolescent, the dependent, etc.); second by the demands the people around them place on children based on the individual developmental

> features of a particular child and on the specific circumstances for the family. (Bozhovich, 2009, p. 78)

The enactment of these two conditions supports the need for reflection on all aspects of the educational system. A key element in understanding the social situation of development is the concept of *pereizhivanie* (Vygotsky, 1984) a state of being in which, the emotional and cognitive processes are inseparable. "Pereizhivanie is expressed in what extent all my qualities and the way they are constituted during their development are involved here and now in this particular minute" (Vygotsky 1984, p.383). As Vygotsky emphasised, "The whole point is, that thinking and affect represents parts of a unified whole-human consciousness" (cited in Kravtsov & Kravtsova, 2009, p. 202).

The concept of will is discussed by Kravtsov and Kravtsova (2009), who state: "Above affect and intellect, that is above emotions and the mind, stands the volitional sphere of the psyche. Will turns out to play the higher meditational function, thereby enabling free action to occur" (p. 202).

Bozhovich (2009) outlines the elements that contribute to the development of personality:

> Formation of personality is determined by the relationship between that place that they [the child] occupy within the system of human relationships available to them (and consequently, the corresponding demands placed on them) and the psychological features that have formed in them as a result of their previous experience. It is out of this relationship that children's internal position emerges, that is, the system of their needs and impulses (subjectively represented by the emotional experiences that correspond to them) that, refracting and mediating the effects of the environment, become the immediate force driving the development of new mental qualities in them. (Bozhovich, 2009, p. 82)

2.3.3 Concept formation.

> We know from the research of concept formation that the concept is not simply a collection of associative connections learned with the aid of memory. We know that the concept is not an automatic mental habit, but a complex and true act of thinking that cannot be mastered through simple memorization. The child's thought must be raised to a higher level for the concept to arise in consciousness. At any stage of its development the concept is an *act of generalization*. (Vygotsky, 1987a, p.170)

Vygotsky (1934/1987a) described the development of two types of concepts: everyday concepts and scientific concepts. *Everyday concepts* develop spontaneously through the child's interactions with their world, *mediated* through experiences and occurring spontaneously. Oral speech development occurs through this process, spontaneously, with no formalised instruction process. The lack of consciousness in the development of the spontaneous concept is because it is not connected to any system of concepts. In contrast *scientific* concepts are developed consciously and are part of a system of related concepts, which is based on the relationships of *generality* among concepts. Perceptions of reality are enriched through generalisation, when *complex connections, dependencies and relationships* are established between the objects represented in the concepts and the rest of reality. The conscious awareness of the scientific concept leads to its *volitional* use. "From the beginning, consciousness and intention direct the child's written speech… In contrast oral speech is learned and used unconsciously" (Vygotsky, 1987a, p.204). Vygotsky saw that it was through scientific concepts that conscious awareness entered into a child's concepts.

Vygotsky gives an example of the child's understanding of the relationship between a sign and an object. 'The relationship of the word 'flower' to the object is completely different for the child who does not yet know the words rose, violet or lily than it does for the child who does'

(Vygotsky, 1934/1987a, p. 234). The example also shows that the child does not always develop understandings from the more specific to the more general, such as car, truck, fire engine, transport vehicles. He saw that "the everyday concept acquires a whole series of new relationships with other concepts as it comes to stand between the scientific concept and its object. Its relationship with the object is also transformed in this process"(Vygotsky, 1987a, p. 222). The main difference between the two types of concepts is the presence or absence of a system, where relationships between the concepts develop. "These relationships mediate the concept's relationship to the object through its relationship to other concepts" (p. 234).

The development of these concepts is not hierarchical "with concrete everyday concepts on the bottom and abstract, scientific concepts on the top or the replacement of everyday concepts with scientific concepts" (Hedegaard & Chaiklin 2005, p. 35). Their development is a unified process contributing to a single psychological system.

> We find the weakness of the scientific concept where we find the strength of the everyday concept, that is, in its spontaneous usage, in its application to various concrete situations, in its relative richness of its empirical content, and in its connections and personal experience. Analysis of the child's spontaneous concept indicates that he has more conscious awareness of the object than of the concept itself. Analysis of his scientific concept indicates he has more conscious awareness of the concept than of the object that is represented by it. (Vygotsky, 1934/1987, p. 218)

In the next section I examine the key concepts aligned to cultural-historical theory and their relationship to instruction.

2.3.4 Instruction.

2.3.4.1 Concepts.

> The concept does not emerge in a static and isolated form but in the vital process of thinking and resolving a task… .There is an initial process in which concepts are worked out. This is followed by a stage in which these concepts are transferred to new objects, then by the use of the concept in free association, and finally, by the application of the concept in the formation of judgements and definition of developed concepts. (Vygotsky, 1987a, p. 128)

Vygotsky believed that direct instruction for concept development was impossible. Children learn words about concepts through instruction with no meaning. The child's ability to verbalise the concept may be interpreted as the presence and understanding of the concept, however, the child is unable to apply the meaning of the concept to new situations. "The child learns to act with the decimal system before he becomes consciously aware of it. At this stage, the child has not mastered the system; he is bound to it" (Vygotsky, 1987a, p. 230). It is often believed in the process of education that scientific concepts "are simply learned or received in complete form through the processes of understanding, learning and comprehension. They are adopted by the child in complete form from the domain of adult thinking" (Vygotsky, 1987a, p. 169). It is the child's ability to use the concept in new situations, and also to use the concept to develop new understandings with a system of concepts that is important. It is also important that Rimat's research (1925, as cited in Vygotsky, 1987a, p. 86) showed that "thinking in concepts divorced from immediately perceivable features presents the child with demands that exceed his mental capacities before the age of twelve years" (p.112). This point emphasises that the learning of concepts needs to be in relevant, meaningful contexts.

In a transmission perspective of school instruction, concepts emerge and develop very differently than they do in a child's life beyond school. The motivation that leads a child to scientific concept development in school is very different from that which leads his spontaneous concept development at home. Vygotsky explained that scientific concepts are different to spontaneous concepts as they have a different relationship to the child's experience, the relationship to the object they represent differs, and they evolve differently from origin to conceptualisation. The child however does not distinguish between the concepts he learns at school and those he or she attains at home.

The development of both everyday and scientific concepts and their interaction are key to understanding the learning and development of children within the institution under analysis.

2.3.4.2 The Relations between development and learning.

Instruction and development are seen as neither two entirely independent processes nor a single process; they are combined together in complex interrelationships. Vygotsky saw that when instruction was applied "to one point in the child's thought, it alters and restructures many others" (Vygotsky, 1987a, p. 198). Instruction precedes development, eliciting new psychological developments. Nevertheless, "development based on collaboration and imitation is the source of all specifically human characteristics of consciousness that develop in the child" (Vygotsky, 1987a, p. 210). The relationship between instruction and development must then be based on the child's ability to elevate his thinking, through collaboration and cognitive imitation so that "what the child is able to do in collaboration today he will be able to do independently tomorrow" (Vygotsky, 1987a, p. 211).

The examination of the relationship between instruction and development involving collaboration and imitation is a key part of the analysis of the practices of the case study

school. To undertake this task, the relations between learning and development need to be defined. Fleer (2013) specifies that learning from a cultural-historical perspective is "a change in the child's 'relation to another person and activities in specific settings' (Hedegaard & Fleer, 2013, p. 183) as we see when a child learns scientific concepts. As a result of learning, children begin to act differently, because they have new insights into how their world works" (p. 362). She explains the concept of development from a cultural-historical perspective as "a process where 'children's motive orientation and engagement in different activity settings change qualitatively' (Hedegaard & Fleer, 2013, p. 183) and as such their leading motive changes" (p. 362). Development involves biological processes, however the dominant influence is the participation in cultural practices.

Development is not the result of the accumulation of learning experiences it is actually a qualitative change in the child's interaction with their world made possible through the reconfiguration of concepts learnt through experiences. Fleer (2013) explains,

> With new scientific understandings about his or her world, the child can act differently and through this afford new possibilities and learning. … The environment does not change, but rather it is a cultural change in the child which affords a new way of interacting *with that same* environment. … Over time, and through the learning of many new concepts, we begin to see a qualitative change in the child's development. … Learning progressively contributes to this qualitative change of the whole child. (p. 362)

The child's motive to engage in learning experiences is a key concept in relation to their development.

2.3.4.3 Motivation.

Children's motivation to engage in the educational demands presented to them is an important factor regarding the relevance of the educational experience and in turn the development of the child. Within the social situation of an educational institution, children, when motivated, are connected to the demands of the institutional practices, and personalise responses to these demands, which enables learning and development. Hedegaard (2012) noted,

> Children learn and develop through their orientation towards the demands in institutional practices for competences, motives and values and on the other hand children's activities personalise practice in their realisation and contribution to the activity settings of practice; thereby children create conditions for their own learning and development of personal competencies and motives. (p. 10)

Motivation can be aligned to the instigation of a dynamic as described by Hedegaard (2011): "Thereby it becomes possible to analyse the dynamic between the environment and the child as a relation between institutional demands and values and a person's activities within his/her social situation of development" (p. 17).

Within school institutions, motivation leading to conceptual development is a crucial aspect for a change in psychological functioning in contrast to simple memorisation. Vygotsky (1987) noted: "As is true for any new form of activity, the motivation for speech the need for it is fundamental to its development …When school instruction begins, however, the need for written speech is comparatively undeveloped. When he begins to write the child does not sense the need for this new speech" (p.203). This is true if the new speech is not contextual, for example completing sentence beginnings, writing about experiences for no audience, however creating an authentic purpose for this new speech such as writing a letter or a shopping list, changes this motivation level.

The enactment of motivation – motivated activity aligned to institutional practices and objectives – is discussed by Hedegaard (2011) as enabling the process of self-movement towards development.

> The relation between institutional practice and its objectives and the person's motivated activity within his/her social situation of development can be seen as the core in conceptualization of the developmental process as self-movement. By distinguishing between practice and activity one can see the inner relation between the child's activities and the societal conditions as mediated by the institutional objectives of practices and thereby get deeper into the analysis of a self-movement of development which is cultural and historical. (p. 12)

A key element within this study is the analysis of the relationship between institutional practice and its objectives and the motivated activity of the children as related to their social situation of development.

2.3.4.4 Subjects.

Accepting that within each traditional school subject there are important, crucial concepts Vygotsky has shown that "various subjects of school instruction interact with each other in the course of the child's development" (1987a, p. 207). His research established that there is commonality in the *mental foundations* underlying instruction in the different school subjects, leading to the potential for each subject to influence others. Thus the development of the *higher mental functions*[2] through instruction goes beyond the content of each subject and the

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[2] Higher mental functions was the focus of Vol. 4, *The history and development of higher mental functions*. In *The collected works of L.S. Vygotsky* (1997a). Vygotsky (1997a) states: "We tried to isolate and trace the line of cultural development of separate mental functions,

mental functions are *interdependent and interconnected.* “The development of voluntary attention and logical memory, of abstract thinking and scientific imagination, occur as a complex unified process” (Vygotsky, 1987a, p. 208).

Within the case study school, the Victorian Education Learning Standards, a subject based curriculum, is implemented using an inquiry approach which enables the development of the interdependent and interconnected mental functions. This process will be examined as part of the study and a review of the literature on the inquiry approach will be provided in the next chapter.

2.3.5 Motive development.

The concept of motive development is related to the engagement and connection of the child to the learning activity leading to possible development of the child. Hedegaard and Chaiklin (2005) conceptualise child development as a cultural process in which the child appropriates motives and knowledge through participation in institutional practices. They explore how to relate children's motives in the competencies appropriated through family and community life with subject-matter teaching in school (p.61). Determining the relevance and connectedness of the curriculum content to the child is a required focus in enabling a child’s motive to learning. Hedegaard and Chaiklin (2005) state,

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separate forms of behaviour connected on one hand, with mastery of external means (speech, arithmetic, writing) and on the other, with internal changes in memory, attention, abstract thinking, formation of concepts” (p.241).

> During school age the child's motives are dominated by the learning motive, which both lets the child orient himself to knowledge about the world in general, and to specific skills appreciated in his community. The schoolchild becomes oriented to topics that are valued by his parents, by the community, or that the child finds new and exciting to explore. The school child's social motives and play motives are still important. (p. 80)

The learning motive becomes a dominant motive in school years, however, social and play motives are still elements requiring consideration by educators and are often based upon the interests children bring to the learning situation. Hedegaard (2002) states that the "learning motive develops from the child's participation in the teaching activity, but the interest the children bring to this teaching has to be a starting point for their development of motivations" (p. 21). Hedegaard and Chaiklin (2005) add, "Whether a change in practice or new activities will influence a child's development of motives, knowledge and skills, depends on the child's possibility to realize his intentions and create his own goals in these new activities" (p. 62).

Within this study the examination of children's negotiations of learning through goal setting and student voice are seen as key elements in engaging student motive development, leading to student engagement in learning.

Motive development is an important concept in this research, which examines the relational contexts in which motives to engage in the learning experiences provided through the institutional practices develop. These experiences when connected to the children's contexts provide possibilities to influence the children's everyday lives.

2.3.6 Zone of Proximal Development.

The distance between actual development level as determined by independent problem solving and the level of potential development as determined through problem solving

> under adult guidance or in collaboration with more competent peers. (Vygotsky, 1978, p. 86)

Instruction must move ahead of development. The goal is to tap into maturing psychological functions that are beginning to awaken within the child, and which are thus within their zone of proximal development. The zone of proximal development refers only to psychological functions, not to the development of skills such as handwriting or riding a bike. Collaboration is used to determine a child's zone of proximal development. A child's ability for imitation, with collaboration, indicates that the psychological function is capable of being developed and also demonstrates an understanding by the child of the importance of the support to achieve the desired outcome. Collaboration is not about collaboratively completing an activity providing intervention during difficult aspects of the task; it is a process of demonstrating or asking leading questions to support the child's thinking.

When working within a child's zone of proximal development,

> the developmental curve may rise sharply and begin to run ahead of the instructional process. What is learned thereafter may be learned in an entirely different way. Here there is a sudden shift in the role of instruction in development. The child has finally understood something, finally learned something essential; a general principle has been clarified in this 'aha experience'. (Vygotsky, 1987, p. 207)

Kravtsova's (2008b) discussion of Vygotsky's zone of proximal development extends this theory further, discussing the initial zone, the zone of potential development. Fleer describes this zone as representing, "the social and cultural world of the child that lies within the sphere of possible engagement*"* (Fleer, 2010, pp. 2-10). Institutional planning provides opportunities for children to have experiences within this zone of potential development, leading to experiences within the zone of proximal development, leading to possible actual development.

2.4 Application of Cultural- Historical Theory to Educational Contexts

The work of Vygotsky and his colleagues indicates that within a cultural-historical perspective, research into the thinking of children needs to take place within the context of their learning and through their interactions with others. Moreover, the historical context and its impact on future cultural activity should be considered. Individual development cannot be interpreted when separated from its cultural historical context. This approach is referred to using the interchangeable terms, socio-cultural and cultural historical. The related research agrees that the individual is developed by, and in turn develops, culture through engagement in its practices, using cultural tools. In relation to this study I will examine the ideas of: *transformation through participation* and *focus of analysis,* then, focus on the notions of *intent participation*, the *funds of knowledge* communities hold, and the use of *conceptual and contextual intersubjectivity* by educators, all of which will help to understand participation in the study site.

2.4.1 Transformation through participation.

> Human development is a process in which people transform through their ongoing participation in cultural activities which in turn contribute to changes in their cultural communities across generations. (Rogoff, 2003, p.37)

Rogoff (2003) has researched children's learning skills in the context of their use and with the aid of those around them. From this extensive research she saw that "learning from other communities requires suspending one's own assumptions temporarily to consider others and carefully separating efforts to understand cultural phenomena from efforts to judge their value" (p.12). Moreover, she noted that the "ages of accomplishment are highly related to the opportunities children have to observe and participate in the activities and cultural values

regarding development of particular skills" (p.170). Both of these points emphasise the impact of cultural experiences on bringing into play a *transformation through participation* as the children engage and learn through involvement in purposeful experiences with a more capable person. People develop as they participate in cultural activities using cultural tools and practices developed by previous generations and in doing so contribute to the cultural practices of future generations.

2.4.2 Focus of analysis.

> To understand human development it is necessary to view it as a dynamic process involving individuals actively, creatively participating and contributing to powerful and changing cultural traditions. (Rogoff, 2003, p. 95)

Rogoff (2003) argues that "human development is a process of *people's changing participation in the socio cultural activities of their communities*" (p. 52, italics in the original). Rogoff surmised that people are neither influenced by nor influence the culture that surrounds them; rather, it is the interplay through their participation in cultural activities using cultural tools and engaging in cultural practices that brings about individual development and contributes to the culture's development. Rogoff (2003) outlined three foci of analysis: personal (individual participation), interpersonal (collaboration) and cultural (community, context) to analyse the three collaboratively transpiring processes. Each lens focuses on a particular aspect ensuring the other influencing aspects are kept visible in the background, as no single attribute can be viewed in total isolation. Using the personal lens, the individual is foregrounded, with the focus on information about the individual as a participant. The focus is not the knowledge the child holds or the activity the child can complete, but the efforts of the child to transform their participation through developed understandings and purpose for engagement. Using the interpersonal lens the focus is the relationship between the participants,

their roles within the interaction and what shared understandings together are developed. Using the cultural–institutional lens we analyse the cultural history of the activities and the setting in which the human activity occurs, and the transformations which will influence the future participation within their communities.

2.4.3 Intent community participation.

Rogoff's research (2003) found that in communities where children were included in the activities of the adult community the children's play reflected these activities, whereas in communities where children were separated from adult activity, their play reflected what they had observed, such as television super-heroes. Thus children's play reflects what the children have had opportunity to observe, and is developed by the opportunities and purposeful facilitation of activities for children to learn from *intent participation* in shared endeavours (p.299). The skills required for intent participation are observation and actively 'listening in' during the ongoing *shared endeavour* activities in which they participate. Rogoff's research concluded that

> Learning through keen observation and listening, in anticipation of participation, seems to be especially valued and emphasized in communities where children have access to learning from informal community involvement. They observe and listen with intent concentration and initiative, and their collaborative participation is expected when they are ready to help in shared endeavours. (Rogoff, Paradise, Mejia Arauz, Correa-Chavez and Angelillo, 2003, p. 176)

Learning is seen as a process of transformation through participation in ongoing cultural activities (Lave & Wenger, 1991; Rogoff, 1990, 2003), and through intent participation, where children engage collaboratively in wholistic learning in authentic contexts.

This approach is contrasted to the transmission model used by institutions in their instruction. Rogoff's research (2003) found that around 1900, a *factory–efficient* approach to teaching and learning became widespread to cope with the increased number of students. The teacher's role was to transfer information and the child's role to receive it. The information was broken down so as to be received in small parts, in sequence, an analogy to an assembly line process. Recently, approaches have portrayed the learner as the active agent in receiving the information, constituting an 'acquisition' model. "In both approaches, however, learning is seen as accretion of information or skills, brought across a boundary from the external world to the mind of the learner" (Rogoff et al. 2003, p.182).

The difference between the approaches is in the involvement of the participants. Rogoff compares the two approaches through various facets: participation structure; the roles of more experienced people and of learners; motivation and purpose; sources of learning; forms of communication, and the role of assessment. Each facet is part of a set of attributes rather than isolated; all facets are integrated to form the approach. Intent participation involves a collaborative, horizontal participation structure with shifting responsibilities. Experienced people guide the new learners' involvement, though these guides still view themselves as learners in the process. The new (young) learner participates, taking responsibility for their learning through intent concentration, developing their skills and understandings so as to be able to take initiative and contribute when ready to engage in the shared endeavour. Motivation is intrinsic in the purpose and interest in the activity. The source of learning is through listening and observation in ongoing activities within a shared endeavour. This activity is not simply imitation, the shared endeavour requires coordination as to the contribution of each participant. Communication is embedded in the process to achieve the shared goal; it is used in the form of conversation, guidance, modelling and argument.

Assessment is integrated throughout the process, with the experienced person analysing the new learner's understanding to inform future guidance. The new learner's willingness to be involved in the process is a key aspect to the assessment as to whether the child is taking responsibility for their learning. (Rogoff, Goodman/Turkanis and Bartlett 2001)

In contrast, in assembly line or transmission instruction, participation is hierarchical with the adult managing all the learners' participation. In the role of expert, the adult breaks down the task into manageable parts and does not participate in the task. The learner receives the instruction and information and completes the tasks. The motivation is extrinsic; the learner often has no understanding of the purpose of the activity or how the parts fit together. The source of learning is through lessons, which develops a dependency on being told how to do things. Communication is based on question and answer processes and lecture scenarios. Assessment is based on accountability, with a focus on retelling what has been learnt or critiquing a product, not the application of the learning to new situations. It is very different for intent participation.

Intent participation is also related to an understanding of the two conceptual frameworks, *funds of knowledge* and *conceptual and contextual subjectivity*, which are discussed below.

2.4.4 Funds of knowledge.

'Funds of Knowledge' is a conceptual framework developed by anthropologist Greenberg (Vélez- Ibáñez & Greenberg, 1992) defined as the "historically accumulated bodies of knowledge and skills essential for … functioning and well-being" (González, Andrade, Civil and Moll 2001, p. 116). The application of this concept has two relevancies to educating in schools: firstly

the ability for teachers and students to understand the *funds of knowledge* brought to school by the students from their home community, and, secondly, the impact on the learning environment of the *funds of knowledge* the teacher brings to their views of teaching and learning.

"Funds of knowledge not only focuses on gaining greater knowledge of children, but this theoretical lens also locates teachers within the community contexts in which their children live" (Fleer & Quiñones, 2009, p.4). Monzó and Rueda (2003) state,

> A life narrative reveals an individual's experiences but also the knowledge they construct through these experiences and the impact this has on their perceptions of the world, their interactions with others, and the decisions that guide their actions (Peacock and Holland 1993). (p. 79)

This understanding of children and the influences of their contexts and experiences enables teachers to build closer relationships with the children and to develop programs building on the children's pre-existing understandings that are relevant to the children's everyday lives. The challenge is to know the student as a 'whole' person, through having knowledge about the multiple spheres of activity in which the child engages (Moll et al., 1992). This knowledge then enables *conceptual and contextual intersubjectivity.*

2.4.5 Conceptual and contextual intersubjectivity.

Fleer (2010) discusses the concept of the "conceptual and contextual intersubjectivity between the child and the teacher" (p.46). Siraj- Blatchford (2009) defined the concept of the mediating role of the teacher, as generated through "shared sustained conversations" (p. 3) with children. Fleer (2010) sees the key to teacher planning as a process of understanding the relations between the mediating role of the teacher and the child's lived social world, resulting in the

process of conceptualising development, learning and pedagogy together. The concept of *obshchenie* is the dialectical conception of development and learning. When *obshchenie* occurs, children become the subject of their own learning. Conceptual and contextual intersubjectivity is based on the awareness of the teacher of the concepts to be developed by the children, with an emphasis on enabling connection to these concepts by the children through relevant contextual situations of investigation. Fleer (2010) discusses the teacher's role as *conceptual framing,* involving being aware of the central *scientific concepts* and simultaneously developing awareness of the child's everyday concepts in relation to the area under investigation, with the goal to transform the child's everyday practice. Developing an awareness of both contexts (in and out of class) and the thinking of the child in relation to the concept provide the conditions for conceptual intersubjectivity. The teacher can connect with the child within a meaningful context. With both the everyday concept and the scientific concepts in play, educational activity that frames the child's thinking is possible.

Fleer (2010) emphasises the "importance of Vygotsky's conception of a single process of self development, where one stitch (concept) in the fabric (conceptual system) can only ever be understood within the context of the whole tapestry which represents the child's life" (p. 198). The *mediating role* of the teacher links the learning to the child's social lives, enabling a *conceptual and contextual intersubjectivity* to occur, fostering opportunities for *obshchenie*.

2.5 Summary

This chapter has outlined the theories developed by Vygotsky and their further development into new theories by contemporary cultural-historical and socio-cultural researchers. The examination of this theory has revealed that the central tenet of this kind of research is that learning and development is a transformation through participation within a social and cultural

context. And in the case of this study, this is so for all participants that are part of the community of learners at the case study school, whether children, parents, family members, teachers or mentors. Moreover, the interactions between the participants lead not only to the development of the child, but also of the institution itself. This belief raises important contradictions to traditional views of teaching and learning, which see learning as a transmission to or an acquisition by the learner. These new understandings emerging in the educational literature cannot be ignored and the traditional practice continued based on practices and beliefs that are outdated. This study aims to examine the theories and practices underpinning a case study school that is attempting to change its practice and to provide a contextual, participative, and collaborative approach to education. The literature research was guided by the initial research question:

What are the underpinning theoretical beliefs and what are the pedagogical practices in play in a contextual, participative, community model of pedagogical reform, enacted in a government primary school in Victoria, Australia?

Following the theoretical literature analysis the examination of concepts related to the institutional practices which support learning and development led to the formulation of related research questions and sub-questions to support the study.

The related question:

In what ways are children, parents and teachers being 'transformed through participation' at the school?

Sub questions:

How does the interplay between scientific and everyday concepts occurring as a result of the beliefs and practice as presented in the school's philosophy?

In what ways did the projects selected for investigation creating a double move?

How are the school principles of negotiated curriculum and collaborative program planning related to the social situation of development?

What is the relationship between the participation structure and motive development?

Behaviourist theory, cognitive theory and its development into constructivist theory shape how learning and teaching are enacted in practice within the school institution. The prior experiences, including the personal educational experiences of teachers and parents, and the professional training of the more experienced teachers also determine how learning theories are taken up or resisted by a school undergoing educational reform. The complexity of and the relations between learning and development and theory and practice within a school institution is where the concepts can best be examined through cultural-historical theory. The concepts of child development are all used to analyse practice. These concepts are the *social situation of development*, *motive development*, learning within the child's *zone of potential development* leading to a *zone of proximal development* to enhance concept development, the interplay between *everyday and scientific concept* development, and the acknowledgement of and building upon the *funds of knowledge*. School reform can be examined through the models of, *conceptual and contextual intersubjectivity* and *intent participation*. Rogoff's three lenses of analysis will be used as the linking tool for each of these aspects.

The following chapter reviews the literature of curriculum theories and approaches, detailing the inquiry approach and the concept of a community of learners in particular, because the

case study school worked with inquiry learning as its central pedagogical practice. Here the review investigates the movement from the use of Cartesian logic to dialectical logic. Educational institutions that have transformed their practices are then analysed, in particular examining key elements and the theoretical basis of the approaches. The aim of this review is to show how this study is situated within this literature and how it is able to make an important contribution to our understanding in this field.

Chapter 3
The Literature Review

3.1 Introduction

The previous chapter outlined the theoretical perceptions of learning and development impacting on educational practices with an emphasis on conceptual ideas within the cultural-historical framework that is fundamental for understanding this thesis. These theoretical conceptualisations need to be considered together with the government policy within which the case study school operates (outlined in the following chapter), to understand the conditions for learning as these relate to a school community working in the current global, Australian and Victorian contexts. The complexity of conditions was highlighted in the last chapter in the discussion of the notions of development, concept formation, social situations of development, and motive development from a cultural historical perspective leading to the examination of the notions of funds of knowledge, conceptual and contextual intersubjectivity, transformation through participation and intent community participation. By bringing these elements together I use a very particular perspective for the meaning of *pedagogical practices in play in a contextual, participative, community model of pedagogical reform* in this thesis. Each of these elements can be interpreted differently by educators, coming from different perspectives on learning and development. Sometimes these perspectives are consciously held and based on scientific knowledge, while at other times they are founded on everyday knowledge based on personal experience. These varying perspectives on the meanings of same terms creates a challenge and dilemma when dialoguing and debating educational concepts and approaches, a dilemma that I believe often goes unidentified within conversations.

This chapter provides a review of the literature into the pedagogical approaches to teaching and learning examining practices that explicitly draw upon theories as a basis for the approaches they adopt in the school – as a whole school approach. Only empirical studies are reviewed. It is acknowledged that many have written about teaching and learning from a whole school perspective, but few have investigated the outcomes or the approaches through research. This review will show how this study is situated within this literature and demonstrate how it is able to make a significant contribution to our understanding in this field. I begin by reviewing research into curriculum theory and related approaches to teaching and learning, then examine the history and interpretations of an inquiry approach. I specifically examine the concept of a 'Community of Inquiry' and discuss the literature on schools that have transformed their pedagogical approaches. In particular, I examine the small, but growing number of studies that focus on cultural-historical theory to frame research and the implementation of contemporary pedagogical approaches in their schools.

This review of the literature provides an understanding of the research focused on approaches to teaching and learning. The findings regarding important insights from the empirical studies together with the theoretical perspectives of development and associated concepts outlined in Chapter Two, will be used to analyse, explain and theorise the institutional, interpersonal and personal practices used in the case study school. The examination of the practices in this school are facilitated by the comparison of insights from the cultural-historical orientation with those from other models of curriculum development and school reform in relation to their theoretical bases.

3.2 Curriculum Theory and Related Approaches

Approaches to teaching and learning have their origins in a theoretical construct, however often practitioners are oblivious to the theoretical context of their practice. This study aims to highlight the need to understand the theoretical constructs, which underpin the many elements within an education practice.

Literature describes and analyses the theories underpinning pedagogical practices in various domains (McNeil, 2009; Schiro, 2013; van den Broek, 2012). To understand the conceptual characteristics of the approaches used in the case study school I will examine the claims of Schiro (2013) in regard to curriculum ideologies, of McNeil (2009) in regard to the practice comprising organising centres or foci and organising elements, and of van den Broek (2012), who compares the characteristics of eight approaches to teaching and learning.

Schiro (2013) examined four curriculum ideologies: Scholar Academic, Social Efficiency, Learner Centered and Social Reconstruction. He argued that 'Ideology' is used to distinguish between motives that underline behaviour and articulated beliefs. His choice of the word curriculum responded to the need to distinguish between domains, the curriculum domain, the instructional domain, the epistemological domain, the learning theory domain, the psychoanalytic domain, and the developmental domain. He states, "Educators within each 'Ideology' have different views about learning" (p. 220). He describes each of his identified ideologies as follows:

- Scholar Academic proponents' point of view is that "over the centuries our culture has accumulated important knowledge, organised into the academic disciplines within

universities" (p. 4). The development of academic discipline understandings involves "learning its content, conceptual frameworks, and ways of thinking" (p. 4).

- Social Efficiency ideology supports the belief that the purpose of schooling is to proficiently meet the needs of society by guiding youth to function as future contributing members of society. The aim is to train youth in the practices they will need in their lives both in the workplace and at home, to live productive lives and contribute to the society and it development.
- Learner Centered advocates focus on the needs and concerns of individuals. Schools should be places of enjoyment where people develop naturally and people's own innate natures are valued. The goal of education in this approach is the development of individuals having their own unique intellectual, social, emotional and physical attributes.
- Social Reconstructionists are aware of the challenges faced by our society including injustices based on racial, gender, social and economic inequalities. They hold the belief that the purpose of education is to facilitate the formation of a more just society that offers satisfaction to all its members.

Schiro argues that there are many domains impacting on the practices within educational institutions, including the curriculum domain, the instructional domain, the epistemological domain, the learning theory domain, the psychoanalytic domain, and the developmental domain. It is my view that many educational institutional practices are based within a belief and values system on the implementation of an agreed curriculum ideology, however the other described domains remain undefined and unconsidered, resulting in a lack of consistency among the elements of the practice, which impact together on the participants. This belief is aligned to Schiro's statement regarding the need to "understand the ideologies within the

richness of the traditions out of which they grew rather than view them solely as they are presently manifested" (p. 7). This point supports the analysis of the theories of learning underpinning educational practice in Chapter Two where I acknowledged the debate over viewing theories in isolation and underpinning research and practice in the light of one theory. However I identified that the complexity of the act of learning for this study is best reflected upon through the theories of the cultural historical approach, with the benefit that this approach builds on the knowledge and understandings developed by the other theories of learning. I aim in this chapter to analyse the literature related to curriculum approaches, reflecting on the learning theories associated with the approaches, so as to develop clarity in the use of terminology associated with the practice within the case study school.

McNeil's (2009) analysis of curriculum organisation outlines the need for analysis of the elements within the practice. He analysed curriculum organisation, which met his definition of an accountable practice in that they were "satisfying" and were able to "encourage students to pursue goals, along the way questioning their present beliefs and constructing more powerful understandings and ways of knowing the world" (p. 168). He claims that the elements (with the learning opportunities they provide) can be coordinated using two kinds of devices, organising centres or foci and organising elements. Organising centres may consist of themes, topics, problems, questions, and projects that are important in their own right but also critical because they can motivate students and give them opportunities to understand and integrate the particular concepts and values identified by the curriculum elements as they follow a chosen focus of study or inquiry. An organising element includes themes and concepts, generalisations, skills and values. McNeil states "organising elements are selected in light of the purposes of the curriculum" (p. 170).

According to McNeil (2009), principles for sequencing learning opportunities go back hundreds of years. The structure for implementing the curriculum involves both institutional and classroom elements and is a consideration involving either the structure of specific subjects, the structure of the broad fields (e.g., language arts), core curriculum structure (addressing general problems or unifying themes), or open structure, where individuality and choices are priorities. It is clear that the analysis of the structure of the institution is important, as many changes to curriculum are set within a traditional structure established for a different purpose and time. However aligned to Rogoff's notion of lens of analysis, the institutional lens must be used in conjunction with the personal and interpersonal lens during the analysis to enable a complete picture of the elements impacting on the participants within the institution.

Like Schiro, McNeil argues that organisational patterns and conceptions of curriculum include a selection of orientations, which he defines as academic or unified disciplines. Five academic patterns are described: a discipline or single subject base; broad fields with a focus to strengthen the interrelationship of ideas and interests towards synthesis or integration; concentration where all aspects of a particular object, event, location, or person are studied; cross- discipline involving one discipline as viewed from the perspective of another; and applications where academic connections are made by using a skill or knowledge from one discipline and applying it to another.

McNeil (2009) analyses the "Unified Disciplines" (p. 181), which he describes as a new academic pattern and identifies:

- Social Reconstruction Patterns with a basis within societal problems;
- Humanistic Patterns where the image of the learner as a developing person guides the curriculum considering the whole person;

- The theory of Developmental Stages which interprets the conceptions of learners and focuses on helping them reconstruct their realities at a higher level, with the view that "students can control their development if placed in environments where parents, peers, teachers and others scaffold activities that exceed the students' current performance levels" (McNeil, 2009, p. 183);
- Open Classroom where the sequences of integration of a humanistic curriculum tend to be structured by the learners;
- Systemic Patterns, which emphasise the specification of curriculum standards and performance indicators.

He declares that

> Progress in curriculum development rests on finding out the concepts and cognitive structures that learners bring with them to the learning opportunities. …Learning is being viewed less as a process of knowledge accretion than as a process of conceptual change… . Underlying most organisational issues, however are disputes about purpose. Curriculum workers who favour academic specializations value organisation as it relates to sequencing for depth… . Those who seek integrated approaches, usually humanists and social re constructivists, distrust pre arranged sequences within a single field. (McNeil, 2009, p. 191)

McNeil makes the important observation that purpose is a defining catalyst for the selection of a curriculum approach; his analysis of the organisation conceptions of curriculum highlights the complexity of understanding this purpose. However, in reflecting upon the practice within my study, I find that none of McNeil's identified organisational patterns and conceptions of curriculum or Schiro's curriculum ideologies sits clearly with the principles of cultural historical theory and that it in fact comprises elements of many of the approaches.

The literature review identified several comparisons between different approaches to teaching and learning (McChesney, 1996; van den Broek, 2012). I will examine an OECD (Organisation for Economic Co-operation and Development) (2012) working Paper by van den Broek titled, 'Innovative Research Based approaches to Learning and Teaching', as it analysed the commonalities between a number of approaches, highlighting common elements between the approaches, which can be used to review practice.

The OECD literature (reviewed by van den Broek, 2012) presents the theoretical base and practical recommendations of eight research based approaches to teaching and learning, highlighting principles and practical recommendations for the successful organisation of innovative learning environments. The approaches presented by van den Broek (2012) are:

Fostering Communities of Learners (Brown & Campione, 1994)

Learning by Design (Holbrook & Kolodner, 2000: Koldner et al., 1998)

The neo-Piagetian Central Conceptual Structures (CCS) theory (Case et al., 1996)

Web-based Inquiry Science Environment (WISE) (Linn, 2006)

Cognitive Tutors (Koedinger & Corbett, 2006)

Direct Instruction (Adams & Engelmann, 1996c; Watkins & Slocum, 2004)

Higher Order Thinking Skills (HOTS) (Pogrow, 1996)

Knowledge Building (Scardamalia 2002; Scardamalia & Bereiter, 2006b)

van den Broek (2012, p. 25) discusses the approaches in terms of three dimensions of educational practice: “extent of direction”, “ideas vs. activities” and “individual vs. community”. The analysis of the “extent of direction” identifies “Direct Instruction” as the most directive approach with several key principles for the organisation of learning “such as the importance of clear, unambiguous communication, the role of prior (prerequisite) knowledge during the step-wise acquisition of complex skills, and the need to monitor students’ progress to refine instruction” (p. 25). The analysis, however, found that these principles also applied to methods at the other end of the scale such as “Learning by Design” and “Fostering Communities of Learners”. This is argued by the point, “These approaches require the teacher to have a good understanding of learning processes, and to closely observe the children’s activities and analyse the kind of thinking that they are engaged in at each moment” (Brown & Campione, 1994, p. 25). It is my argument throughout this thesis that the role of the teacher is the critical element in multiple ways, one of which is the role of planning and implementing purposeful learning contexts. It would seem that this central role cannot be fulfilled without clear, well theorised understandings of learning.

The second dimension of education identified by van den Broek as “ideas vs. activity” is a variance in the focus on ‘Ideas’, described as “approaches that have a focus on understanding key concepts or acquiring general thinking strategies” as contrasted with “activity” approaches described as occurring “with a large amount of hands on activities or fact recall concerning specific information” (Bereiter & Scardamalia, 2008, as cited in van den Broek, 2012, p. 25). The analysis highlighted all approaches emphasized the importance of “key concepts or big ideas that are learned in depth and can be transferred to different situations” (p. 25). The authors stated this “reflects a general paradigm shift in education from the focus on the *amount* of knowledge toward a stronger focus on the desirable *structure or quality* of

knowledge (Schneider & Stern, 2010)" (as cited in van den Broek, 2012, p. 25). The focus on 'ideas' aligns to my argument throughout this thesis for the planning of purposeful learning experiences that are aligned to beliefs and theories underpinning the practices, which within this case study are best aligned to the principles of cultural-historical theory.

The third dimension of education inherent in the eight approaches was found to be the extent of emphasis on the individual versus community. Three approaches were found to have an emphasis on the individual: "Direct Instruction", "Cognitive Tutor" and "Central Conceptual Structures". In contrast, the other approaches were declared as making

> more extensive use of group work and discussions as a means to motivate students to organize and articulate their thoughts during socially-oriented learning…work takes place in heterogeneous student groups more often during the community oriented approaches, based on the assumption that students benefit from interactions in diverse groups of learners, where they learn to teach and communicate about their own and other's ideas during social, cooperative learning. (van den Broek, 2012, p. 26)

My contention is that cultural historical theory provides a more robust conceptual framework for theorising and understanding the value of the community in enabling interpersonal interactions as a foundation for learning and development.

The author van den Broek concludes, "All approaches are based on a model of learning mechanisms. Some models describe which concepts and strategies students should learn; others focus more on the way in which students acquire concepts and develop skills in response to teaching, as well as common difficulties during learning and ways to overcome these difficulties. This kind of information forms pedagogical content knowledge" (Schneider & Stern 2010 as cited in van den Broek, 2012, p. 26). Pedagogical content knowledge is what teachers require to plan activities based on a clear idea of the function of each activity for

learning, and to direct attention toward those kinds of investigations and communication that help their students to learn and practise relevant concepts and skills. The three dimensions of educational practice, extent of direction, ideas vs. activities and individual vs. community are each important elements for investigation within this case study. Each of these elements will be examined: the extent of direction and ideas vs. activities will be looked at through an institution lens and individual vs. community through an interpersonal lens on practice. Moreover, a personal lens will also investigate the concepts of motives and development. A key element further to those identified in van den Broek's work is the concept of contextual and conceptual intersubjectivity (Fleer, 2010), which will be examined in relation to this case study. The examination of key elements within the educational practice and the strategies used to enact those elements provides a more comprehensive analysis than defining the approach aligned to a curriculum ideology or orientation.

A contemporary approach to teaching and learning, which is embedded within varying methodologies, is the 'Inquiry' approach. The focus of this approach is the result of a movement away from the direct instruction orientation developed for the industrial age, to a participative structure for the global, information age. A literature search highlighted the dominance of the inquiry approach within recent educational research[3]. This term is also the approach, which the case study school uses to describe its practices. In the following section I examine a selection of existing models of inquiry identified from this literature search and

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[3] Monash University Library 'Search' of books, articles and Database ERIC found 10 468 items from 2000 to 2012 using the terms Education and Inquiry Approach. This 'Search' was narrowed to 930 items using the terms, inquiry approach and children.

discuss these findings, in order to show the areas in which significant gaps in understanding exist between the practice and the epistemological methodology of cultural historical theory as related to a school context.

3.3 Inquiry Learning

In this section I examine the development of the concept of inquiry. I begin with its use within the discipline area of science, and problem based learning. I then review in detail the alignment of inquiry within the literature to constructivist theory to highlight the misconceptions prompted by the use of the term by educators and researchers. Next I evaluate the place of technology within inquiry, the process approaches used and the links of these approaches to the thinking curriculum. This section leads into the following section where I examine the varying interpretations of community and inquiry, the relation of this study to these concepts and the ways this study will contribute to the knowledge of this field.

3.3.1 Inquiry and science.

Inquiry approaches influence strongly the teaching of science with an emphasis on constructivist principles (Bencze, 2010; Cole, Ryan & Tomlin, 2003 and also see Chapter Two aligned to the practice of scientific research. A second identified emphasis within the research on inquiry in science teaching and learning, was the comparison between traditional teaching methods and the inquiry approach characterised by terms such as concept mastery, creative thinking and investigation (Kim, Van Tassel-Baska, Bracken, Feng, Stambaugh & Bland, 2012; Llewellyn, 2010). Longo (2011) investigated inquiry oriented science lab activities, finding that inquiry-based science "illustrates how teachers can prepare students for standardized assessments while creating meaningful lessons with real world connections" (p. 1). This literature indicates that practitioners in the area of Science have embraced the change

to using relevant, purposeful teaching and learning approaches, aligning the approach to scientific research methodology. Nevertheless the challenge still exists to achieve the knowledge-based outcomes of traditional approaches as assessed through standardised assessments, which are used worldwide. This issue gives rise to a focus in my study, which is to examine both the valued history of the discipline areas and the associated developed practices, as well as to research new ways of learning that are accountable to the current cultural needs of the participants, and that may result in collaboratively transforming the culture and practice.

3.3.2 Problem based learning.

Problem-based Learning is another approach aligned with inquiry learning within the literature (Barell, 2006; Gillies, Nicols, Burgh & Haynes, 2012; Hmelo-Silver, Duncan & Chinn, 2007; Panasan & Nuangchalerm 2010). Barell (2006), in reference to problem-based learning as an inquiry approach, claims,

> In a world with increasingly global economies and competition, students need to learn how to think critically and analytically, and to apply the imagination to solve complex problems. Problem based learning (PBL) does just that, helping students identify problems, pose questions, research answers, report results, and create a stake in learning. While teachers know the benefits, they are sometimes challenged by the process. (Abstract)

He argues for an inquiry approach enabling teachers to prepare their students to take ownership of a task, think critically and analytically, and use appropriate learning resources in acquiring contextual and procedural knowledge. Learners gain proficiency in problem-solving skills through self-directed learning and collaborative teams as they seek solutions to real-life challenges. Barell (2006) describes three levels of inquiry: teacher-directed, teacher-student

shared, and student-directed. He discusses other key elements, such as learning environments and cross discipline studies and assessment; all these elements add to the complexity of the approach. Barell acknowledges the complexity of the problem-based learning approach and the challenges in implementing the approach. In my study I aimed, through an interpersonal, institutional and personal lens within the theoretical perspective of cultural historical theory, to analyse teaching and learning practice to identify the role of problem based learning within the approach used in the school, determining when and why it was chosen for use, and how it enabled the achievement of the desired outcomes.

3.3.3 Theoretical basis of an inquiry approach.

Constructivism is identified in the literature as a central theory used in describing an inquiry approach to teaching and learning (Bevevino, Dengel & Adams, 1999; Duffy & Raymer, 2010; Gregory, 2002; Lonka, Hakkarainen & Sintonen, 2000). I detail the work of Lonka et al.(2000) as they theorise their interpretation of inquiry learning in the light of constructivist theory in detail. In doing so I identify several challenges in regard to understanding conceptual development and the role of the teacher, which I believe are addressed through an interpretation of these challenges using cultural historical theory.

Lonka et al. (2000) coined an approach called "Progressive Inquiry Learning" described as a theoretical approach to learning, based on questions. The underlying theory is described as follows:

> During the past two decades, a constructivist approach to learning and knowledge has become dominant in educational psychology, and especially in research on science education (e.g., Champagne, Klopfer & Gunstone, 1982) and text comprehension (e.g., Chan, Burtis, Scardamalia & Bereiter, 1992). Learning is viewed as an active, constructive process rather than a passive, reproductive process (Bereiter, 1985; Glaser

> & Bassok, 1989; Neisser, 1976; Peterson, Fennema, Carpenter, & Loef, 1989; Resnick, 1984; Shuell, 1985). This approach draws on Piaget's (1954; 1972) notions of intelligence, learning and cognitive development, Bartlett's (1932) conceptions of reconstructive memory, and Ausubel's (1968) assimilation theory. (p. 9)

Lonka et al. (2000) use the work of Lonka, Joram and Bryson (1996) to identify three core conceptions of cognitive theory relative to their approach.

Firstly, constructivity is viewed as the learner constructing knowledge and cognitive strategies, involving learning being viewed as qualitative restructuring and modification of schemata, in contrast to being viewed as simply accumulation of new information in memory. Active epistemology, the second core conception, is related to constructivity, referring particularly to beliefs about the learner's role in the learning process. Students can be placed on a continuum, with learners described as active, intentional individuals who are mostly responsible for their own learning at one end and at the other end, viewed as a receptacle that passively gathers what a teacher, who is responsible for the students' learning, teaches. Mental representation is the third core concept where the students' performance on problem-solving activities and explanations of their involvement in these are most often attributed to their mental representations of concepts related to the problem and also their prior knowledge. The authors see the goal of instruction in the light of these three theoretical concepts, constructivity, active epistemology and mental representation. The authors see the goal of instruction as conceptual change, and the aim of learning as knowledge acquisition where the child is actively constructing an interpretation of the world, driven by the urge to pose questions and to seek explanations, and working toward more thorough and complete understanding.

Lonka et al. (2000) claim the idea of child-centred primary education can be reconceptualised in the light of theories on expertise, conceptual change and epistemological development. These elements differ greatly when examined from a constructivist perspective as opposed to a cultural historical theory perspective. Their research raised several questions in relation to these elements:

Firstly an issue in relation to development and expertise is:

> research on expertise shows that young children are able to surpass their developmental level in domains in which they also have expert knowledge. For instance, the reasoning of a 7-year old child who has expert knowledge in chess or in biology may exceed the reasoning of a 10-year old child – but the advance is limited to the very domain (Chi & Ceci, 1978). Those researchers who see children as experts (e.g. Micki Chi, Stella Vosniadou), are somewhat opposed to the Neopiagetians who are more likely to believe in domain-general development (e.g., Robbie Case). However, the importance of social and cultural context in children's learning is currently widely recognised (Bruner, 1996). (Lonka et al., 2000, p. 9)

Secondly, the authors questioned the approach in relation to scientific thinking:

> Many researchers also believe that the development of scientific thinking implies a development from less coherent toward more coherent theories or explanations (Thagard, 1989; Chi, 1992). There is, however, an alternative contrasting view that the naive conceptions are not theories at all, but merely untidy, unscientific collections of meanings (Solomon, 1983) or disjointed, piecemeal and fragmented conceptions, phenomenological primitives (DiSessa, 1988; Hammer, 1996). A widely debated issue is whether or not students' naive beliefs are theory-like, and what kinds of changes are required to modify naive theory into a scientific theory. (Lonka et al., 2000, p. 11)

These perceptions and theorisations of the approach raise issues when the approach is examined from a constructivist perspective. Nevertheless, these are responded to when

examined from a cultural historical perspective through the concepts of the *zone of proximal development*, the *social situation of development* and the relationship between *scientific and everyday concepts* as described in the previous chapter. Each of these concepts is examined in the study in relation to the approach used within the community of the case study school.

The authors also raise the challenge of understanding concept development. Lonka et al. (2000) ask,

> How can conceptual change take place? The problem that needs to be explained is how a new organisation of concepts is achieved and how new and increasingly complex cognitive procedures are constructed by learners - particularly when learners must grasp concepts and procedures more complex than those they already have available for application (Bereiter, 1985). Engeström (1987) presents this as a metatheoretical problem: How can a structure generate a structure more complex than itself? This problem is called the learning paradox (Pascual-Leone, 1980). Bereiter (1985) found it especially severe when the kinds of learning in question are those that lead to understanding the core conceptions of a discipline or mastering more powerful intellectual tools. (p. 11)

This question is aligned to my research of the cultural historical elements in play within the practice of the school, examining the relationship between *scientific and everyday concepts, intra- and inter-psychological functioning*, the 'zones of development' and the *social situation of development*.

Lonka et al. (2000) describe approaches that they state apply constructivist pedagogy to an inquiry approach to teaching and learning. One of these approaches is the 'process oriented' approach. The use of cultural historical concepts below, within the description of the approach highlights the confusion that is common with educators' interpretation and implementation of

cultural historical theoretical concepts and their relationship to constructivism. This is an issue, which is pertinent to my study.

> Applebee (1986) has conceptualised process-oriented instruction in the following way: "In process-oriented approaches, the students' goals drive the instructional activity, the teacher stands in the role of a collaborator rather than evaluator, and the outcomes are better thought of as procedural rather than declarative knowledge" (p. 107-108). Process-oriented instruction is based on Vygotsky's (1978) idea of the social construction of cognitive activity. The zone of proximal development is a central concept here, referring to the distance between actual developmental level in independent problem solving and potential development as determined through problem solving in collaboration with more capable peers (Vygotsky, 1978, p. 86). Applebee and Langer (1983) use the term "instructional scaffolding", adopted from Wood, Bruner and Ross (1976), as a way of describing essential aspects of instruction that are often missing in traditional approaches. They see learning as a process of gradual internalisation of procedures available to the learner from the social and cultural context in which the learning takes place. New skills are learned by engaging collaboratively in tasks that would be too difficult to do alone but that can be completed in interaction with the teacher or peers. The role of the teacher is to provide the necessary support (scaffolding) to allow the tasks to be completed, and in the process to provide the learner with an understanding of the problem and of the strategies available for its solution. (Lonka et al., 2000, p. 13)

This approach highlights the confusion between the elements of cultural- historical theory and constructivism, between the concepts of collaboration within the ‘zone of proximal development’ and ‘scaffolding’, which was discussed in the second chapter as aligned to constructivist theory. What is evident in Applebee’s conception of process-oriented instruction is a mixed alignment between constructivism and cultural-historical theory. However, as was shown in Chapter Two, the basic tenets of constructivism are different from those of cultural-historical theory. However Applebee’s account of process-oriented instruction is theoretically

confused. A focus of this study is examining the roles of the participants within the practices of the institution and the theorisation of these participation structures.

Regarding the approaches they investigated, Lonka et al. (2000) stated their concern with the fact that the teacher controlled the process of asking and answering questions. They cited Brown et al. (1993) as commenting: “If a teacher takes control of the most important aspects of the learning process, he or she may not sufficiently encourage students' own thinking and facilitate their own cognitive efforts” (Lonka et al., 2000, p. 14). They propose a “scientific inquiry knowledge seeking inquiry” approach:

> Several, concurrent, cognitive research projects share the common goal of fostering such research-like processes of inquiry in education (e.g., Carey & Smith, 1995; Perkins, Crismond, Simmons, & Unger, 1995; Scardamalia & Bereiter, 1994; Hakkarainen, 1998b). Knowledge- seeking inquiry entails that knowledge is not simply assimilated but constructed through solving problems of explanation and understanding. Through intensive collaboration and peer interaction, resources of the whole learning community may be used to facilitate advancement of inquiry. (Lonka et al., 2000, p. 14)

This approach builds on the Interrogative Model of Inquiry (I-Model) in which scientific inquiry and knowledge acquisition more generally are viewed as processes of formulating questions and finding answers. These approaches highlight again the principles of the constructivist approach, through the child personally constructing knowledge within a social context. However a key element within these approaches is the practice of research-like processes of inquiry in education; this is an important approach which is examined within my case study.

I include this approach within the literature review, as the I-model of inquiry emphasizes an important element within research in the use of questioning. It distinguishes between two types – and two levels – of questions (Hintikka, 1985; Sintonen, 1984, both quoted by Lonka et al., 2000). A principal question is used, determined by the cognitive goals of the inquiry, followed by smaller subordinate questions that need to be answered in order to achieve understandings in relation to the principal question. "Principal questions are often explanation-seeking in nature and arise when an agent tries to fit new phenomena to his or her already existing knowledge" (Lonka et al., 2000, p. 19). The children use both prior knowledge and research from a variety of resources to answer the questions. Advancement of the inquiry may be tracked by examining the development of the questions generated as the research process develops the formulation of new perspectives and new questions leading the inquirer closer to new understandings in relation to the principal question. Lonka et al. (2000), set this approach within its historical context:

> The fact that fruitful inquiry starts with a question and proceeds by forming new and more precise questions from the original question has been well-documented in cognitive research (Ram, 1991; Scardamalia & Bereiter, 1992; Simon, 1977). Interestingly, the interrogative view is also perhaps the first explicit view of how knowledge is acquired and how it can be transmitted in both science and in everyday life. For example, Socratic dialogues were based on the assumption that questioning is the method of bringing forth knowledge (Meno, 85d), and Aristotle's four types of causes are best viewed as answers to four distinct types of explanation-seeking why-questions (Moravcsik, 1974; Sintonen, 1989), and mediaeval disputations proceeded in the form of question-answer dialogues. (p. 19)

This approach, though constructivist in theory due to its focus on the individual construction of knowledge within a social context, suggests that it is important to focus on the use of

questioning in the analysis of the collaborative inquiry projects within the case study school, and the place of dialogue within these projects. Lonka et al. (2007) state:

> an important condition for the inquiry process to occur is that students encounter, often enough, a phenomenon that is against their expectations and recognise the difference between their own view and new information. Dialogical interaction with other inquirers may facilitate making of inferences as far as it facilitates expression of one's implicit assumptions, explication of cognitive commitments and explanation of one's view to the others. (p. 19)

3.3.4 Technology and inquiry.

The use of technology within inquiry is a growing field of literature. In this section I will investigate, three uses of technology 'Computer-supported Intentional Learning Environments' (CSILE) (Scardamalia & Bereiter, 1993) involving the development of data base, 'WebQuest' (Dodge, 1995) involving authentic tasks and 'Apple' 'Challenge Based Learning' (www.**apple**.com/au/education/**challenge-based-learning**/) which is an inquiry based approach which utilises technological devices and applications. The use of technology to support student learning is an important consideration in a teaching and learning approach within current society.

CSILE (Scardamalia & Bereiter, 1993) is an example of an approach, which provides a platform for student sharing and collaboration, and is a networked learning environment for promoting higher-level processes of inquiry in elementary education. A key part of the system is a communal student developed database for producing, searching, categorising, and linking knowledge. The system contains various tools for text and chart processing. Students use CSILE in the context of all domains of knowledge studies at school and is designed to engage students in a process of generating research questions, constructing their own intuitive

explanations, and searching for new information following a guiding approach. The CSILE environment is designed to guide the students in categorising their computer entries as problems (Problem), subordinate problems (I Need to Understand), intuitive theories (My Theory) and new scientific information (New Learning).

Lonka et al. (2000) cite Hakkarainen's (1997; 1998b) use of the CSILE learning environment to examine whether elementary school children, collaborating within a computer-supported classroom, participated in research-like processes of inquiry that characterised practices of scientific research. Hakkarainen's study indicated that the students were themselves able to generate a series of research questions that were meaningful and valuable from the viewpoint of the cognitive goals of their inquiry. The qualitative content analysis revealed that approximately 90% of the research questions generated by the students were explanation-seeking in nature, such as 'Why do you get some diseases once, and some diseases many times?' (Lonka et al., 2000, p. 17). The group progressed from a rather general principal question concerning what kinds of cells there are in the brain to more specific ones. New information appeared to make the development of more specific research questions possible 'How do glial cells hold the brain together? And further, What do neuron cells look like and how do they work?' (p. 17).' Their analysis revealed that the students systematically built on each other's work and further elaborated problems and concepts generated by the other students.

The question the research raises for me, is that although the outcomes involving the use of collaborative learning, resulting in advancement in understandings, are impressive as a participative, co-constructed approach, the approach supports outcomes which essentially

develop factual information already present within the world. It would seem that the goal for inquiry learning should go beyond knowledge location.

WebQuest was developed by (Dodge, 1995) as an inquiry based teaching tool in which students of varying ages participate in an authentic task involving the use of predesigned internet resources and other print material. Yang, Tzuo and Komara (2011) describe the approach as involving learners focusing on gathering, summarising, synthesizing and evaluating information within clearly defined parameters in order to accomplish an authentic task set by the teacher. They state that the research in teacher preparation has shown that WebQuest enhanced

> problem solving skills, higher order thinking, motivation, creativity, critical thinking, active learning, connection to authentic contexts (Abu-Elwan, 2007; Allan & Street, 2007; Lim & Herandez, 2007) and assisted in bridging the theory to practice gap (Lim & Hernandez, 2007). It should be noted most studies were conducted on the subject areas of math, literacy, or science. (Yang, Tzuo & Komara, 2011, p. 21)

Their research also found that "overall, after experiencing WebQuest activities, teachers felt that WebQuest promoted higher order thinking, critical thinking, problem solving, engagement and understanding, and collaborative learning" (p. 27).

In an analysis of Web Quest's theoretical basis and congruency with pedagogical approaches, Yang, Tzuo and Komara (2011) found the matches to include a focus on:

- Constructivism and inquiry based learning
- Higher order thinking and problem solving
- Universal design for learning and differentiated instruction.

Nevertheless, I question whether the approach is exclusively constructivist, as the process involving collaborative engagement in a shared experience, often involving the use of mentors or cultural tools and resulting in the co-creation of new ideas and new understandings, are also all characteristics aligned with cultural historical theory.

Challenge based learning is an approach designed by Apple to engage children in an inquiry approach supported by the use of Apple developed technological devices and applications. The process involves:

1. Every challenge starts with the selection of a **big idea** — a broad topic that has importance to students and their community.

2. Students explore their big idea by asking **essential questions** that reflect their individual interests and community's needs.

3. From the essential questions a **challenge** is developed to guide students toward a real-world solution.

4. To meet their challenge, students need to ask **guiding questions**. To find answers, teachers work with students to identify guiding activities they can do at school and in their community.

5. Students take advantage of websites, podcasts, apps, audiobooks and other **resources** to help answer guiding questions and develop solutions.

6. With their research complete, students choose one **solution** to develop and showcase their thinking through a **presentation**. Once the solution is approved, students implement it in the real world. The challenge is now complete and can be shared via a video made in iMovie or a website built in iWeb. At the end of each challenge, students reflect on the entire process to

help deepen their learning and enrich future projects. Key elements within this approach support the inquiry approach implemented within the case study school, when activities involved collaborative inquiry.

The connection of these approaches, 'Web Quests' and 'Challenge Based Learning', to cultural historical theory is evident in the concept of transformation through participation, through critical involvement in the process of collaboration, community, questioning and action in authentic contexts, leading to the development of new understandings. The challenge of these approaches and other approaches which reflect a step by step guide to inquiry (Murdoch, 2013; Neuman, 2012) is the fact that the documented approaches sit within the curriculum description domain and do not provide connections to the complexity of the elements that are in play to enact the underlying values and principles within all experiences of the participants in the educational institution. In the next section I examine further the common method of process approaches to inquiry found in the literature.

3.3.5 Process approaches to inquiry.

In this section I describe three approaches to inquiry, which highlight the variety of methodologies that can be described under this title. I begin with I_LEARN, Neuman's (2012) approach to information understanding. I then analyse possibility thinking, Burnard, Craft, Cremin, Duffy, Hanson, Keene, Haynes and Burns' (2006) approach involving collaborative inquiries based on children's interests, valuing the teacher learner relationship and the context in which the learning occurs, and finally discuss Crick's (2009) democratic, archaeological pedagogy involving personalised projects developed from student interests, involving the ongoing development of identity. I complete this section by discussing the concept from the

perspective of Department of Education and Early Childhood Development (DEECD) as characterised in the Victorian Essential Learning Standards.

Neuman's (2012) I_LEARN approach has a focus on students' efficiency and effectiveness in the information age, their ability to engage successfully with a wide variety of information types and formats:

> Becoming lifelong learners in a world in which information flows freely and defies the boundaries of traditional disciplines and subject areas, children and youth in particular must develop strategies for engaging with ideas that transcend the curriculum and its usual topics and structures. (p. 1)

The I-LEARN Model describes the process of learning within information through the steps of—Identify, Locate, Evaluate, Apply, Reflect, kNow.

The theoretical basis for the approach draws from the conceptions of the nature of information from two sources, firstly the information as conceived of in science literature. Neuman states, aligned to Buckland's perspective (1991) information can be conceptualized as a process (i.e., the communication act); as knowledge (i.e., an increase in understanding); and as a thing (i.e., an object that imparts information). Neuman cites Marchionini (1995) who states information

> is anything that can change a person's knowledge …[and] includes objects in the world, what is transferred from people or objects to a person's cognitive system, and … the components of internal knowledge in people's minds. (p. 3)

Secondly the I-LEARN approach also draws from the literature of instructional design. Neuman (2012) refers to Gagne (1965,1977,1985) as being revered among instructional-design theorists for linking the activities of instruction to the corresponding steps of cognitive information processing such as showing the relationship of activities designed for "stimulating

recall" to the step of "coding/storage entry". He states that Gagne also proposed "categories of learning" that correspond closely to different types of information use, from making simple stimulus–response connections such as mastering verbal information to engaging in highly complex information behaviour such as problem solving. He cites Merrill's (1983,1999) proposal that learnt information comprises four types (facts, concepts, principles, and procedures) and that learning involves three kinds of cognitive performance (remember, use, and find). He states that Anderson and Krathwohl's 2001 revision of Bloom's *Taxonomy of Educational Objectives* updates and captures the nature of knowledge and of learning aligned to the literature on instructional design.

Neuman (2012) summarises the approaches theoretical foundation as follows:

> Finally, the model is grounded in the understanding of learning summarized in Bransford, Brown, and Cocking (2000) for the National Research Council. These authors' constructivist view—that learning is an active, dynamic process that involves stages and levels—meshes well with the dynamism of information itself. The I-LEARN model—itself a dynamic construct—encompasses all these dimensions. (p. 3)

The elements of this approach relevant to this study are the importance of information for understanding and the ability to access information for relevant contexts, be it in the form of facts, concepts, principles or procedures. Again the alignment of this approach to constructivism places a different perspective on how the experiences are internalised. Here the process is described as occurring through stages and levels as opposed to the perspective of cultural historical theory, which involves intra- and inter-psychological functioning where development is seen as a crisis in understanding leading to the conceptualisation of new understandings within a system of concepts, aligned to the development of consciousness of the concepts under investigation. It is only when the information under investigation is

contextual and aligned with a relevant purpose, that conceptual understanding will develop; this is an argument that is closely examined in this thesis.

The notion of "possibility thinking" (Craft 2001, p. 54) is described as a form of creative thinking, conceptualised in terms of both problem finding and problem solving through the posing, in multiple ways, of the question 'What if?' Possibility thinking is implicit in the learner's engagement with problems which can also be described as the shift from 'What is this and what does it do?' to 'What can I do with this?' Craft suggests that there are nine necessary features, which may be clustered into two overlapping sets of concepts and include: (1) posing questions and play, innovation and being imaginative, and (2) self-determination, risk, development and action. The focus is on children generating ideas used as a framework for displays, which they then help to make and later play with them once constructed.

Burnard et al. (2006) further developed the concept term "possibility thinking- collaborative inquiry", thus emphasising that the dynamic inter-play between teaching and learning needed to be recognised and conceptualised as did the *enabling context* of the classroom and the wider school environment. This re-development of the approach highlights the development from a step-by-step approach to include the consideration of the contextual and interpersonal elements. The question my study raises for me is 'What is authentic learning?', which has been seen here (in Burnard et al.'s work) as creating an interactive display for a classroom. The relevance of their approach to this study is the focus on collaboration and problem solving. A motive to engage is developed, linking the approach to the cultural historical theory, in which elements of motive development from interpsychological functioning are marshaled to enable intra psychological functioning. Crick (2009) highlights these elements further.

Crick (2009) describes an inquiry-based learning approach, which she states reconciles the personal with the public through a democratic and archaeological pedagogy. She argues that an

> 'archaeological' approach to knowledge creation has as a focus, both the selfhood and identity of the learner, the values, attitudes and dispositions necessary for learning how to learn, and the complexity of knowledge acquisition in the networked information society. (p. 73)

A community of scholars and practitioners developed the approach over several years, drawing together strands from curriculum innovation, problem-based learning, learning power theories and the notion of 'competence' as an educational outcome. In particular the approach stems from research on personal qualities for life-long learning by researchers (2003) at the University of Bristol who identified and then developed a means of assessing essential values, dispositions and attitudes of effective lifelong learners. Crick (2009) states

> Feedback from the assessment tool (ELLI) is used to support each learner in becoming aware of, and taking responsibility for, their own learning (Deakin Crick et al. 2004; Deakin Crick 2007; Deakin Crick and Yu 2007). Seven dimensions of learning power emerged from the initial data, and have proven valid and reliable in subsequent studies. The dimensions each comprising values, attitudes and dispositions are: *changing and learning* (a sense of oneself as someone who learns and changes over time); *critical curiosity* (an orientation to want to 'get beneath the surface'); *meaning-making* (making connections and seeing that learning 'matters to me'); *creativity* (risk-taking, playfulness, imagination and intuition); *interdependence* (learning with and from others and also being able to learn alone); *strategic awareness* (being aware of one's thoughts, feelings and actions as a learner and able to use that awareness to manage learning processes); and r*esilience* (the orientation to persevere in the development of one's own learning power). (p.74)

Crick's analysis focuses on conceptual elements of the approach, locating it within the contemporary discourse of personalisation (A focus in England's National Policy) and the paradigm shift from an industrial, mechanical metaphor of education towards what she describes as "a complex, organic and participatory metaphor of learning"(p. 74).

Theoretically, the approach is placed as a development from constructivism, as it is positioned within a participatory worldview, which goes beyond constructivism because it also recognises:

> experiential knowing, that is, 'knowing that takes place prior to our capacity to construct concepts with which we articulate our world, a knowing through experiencing and being present in the world. It is a knowing rooted in participation and encounter, linked to ontology, which is subjective–objective. It is subjective because it is only known through the form the mind gives it; it is objective because the mind interpenetrates the given cosmos, which it shapes' (Heron 1996, p. 11). (Crick, 2009, p.74)

Crick links her approach with that of Heron and Reason (2007), who argue that this participatory paradigm enables four interdependent ways of knowing: experiential, presentational, propositional and practical. They state that these forms of knowing comprise the basis for critical subjectivity, which involves a self-reflexive focus to the experiential ground on which one is standing. Furthermore it extends to critical inter-subjectivity because,

> our personal knowing is always set within a context of both linguist-cultural and experiential shared meaning … having a critical consciousness about our knowing necessarily includes shared experience, dialogue, feedback and exchange with others (Heron & Reason 1997, p. 283). (Crick, 2009, p.75)

Personalisation as pedagogy is seen as attending to the formation of identity and the dispositions, values and attitudes necessary for lifelong learning and engagement. The process is seen as continuously engaged in and negotiated through the stories constructed and reconstructed, keeping a particular biography or narrative going. The journey of inquiry and personal growth is described as moving from the self /personal to the competent learning agent /public domain. This journey is through "four stations", identity, desire and motivation, to dispositions, values and attitudes, to acquisition of skill and strategies, knowledge and understanding to achievement and competence. The implementation is again mapped on to steps in a sequential but iterative and cumulative learning process involving: choosing/deciding, observing/describing, wondering/interrogating, discovering/storying, navigating/mapping, spanning/connecting, interacting /incorporating and reconciling, validating (Crick, 2009).

Crick (2009) summarises some key perceptions on the approach of inquiry within the educational domain, related to two periods of change within pedagogical development within the western world, the child centered pedagogies of the 1960s and knowledge based approaches of the 1990s.

> It may appear on the surface to be a return to the child-centred pedagogies of the 1960s, in reaction to the overly prescribed knowledge-centred pedagogies of the 1990s. The centre of balance, however, is neither the 'child' nor the 'knowledge': the focus is on the process of knowledge co-construction – and as such it is learner centred, rather than either child centred or knowledge centred. It integrates and reconciles the two. (Crick, 2009, pp. 87-88)

The role of 'others' within the approach highlights the place of coaching, scaffolding and mentoring, which enables the learners to focus iteratively on the stations as they moves

towards their personally chosen outcomes. These perspectives on the role of 'others' indicate the approach is aligned with constructivism, while Crick's concept of connectivity within learning outlined below moves her theoretical perspective towards a cultural historical perspective in regard to the development of consciousness in using the approach.

> Learning power is defined as 'a form of consciousness characterised by particular dispositions, values and attitudes, with a lateral and a temporal connectivity' (Deakin Crick et al. 2004; Deakin Crick 2007) … Temporal connectivity refers to a 'way of being' in the world that orientates a person towards changing and learning over time, understood through narrative and in different contexts, while lateral connectivity refers to the ideas embedded in a sociocultural view of learning in which the learner is a 'person in relation' to other people and to cultural tools, stories and artifacts, in which learning is mediated through the interactions of learning relationships (Rogoff and Lave 1984; Rogoff and Wertsch 1984; Lave and Wenger 1991; Moseley et al. 2005). These may often be within a community of learners: a group of people committed to share learning in a purposeful and collaborative manner. (Crick, 2009, p. 78)

The approach is also related to the zone of proximal development, another cultural historical concept.

> Another principle is the need for flexibility and responsiveness, in both 'content' and 'pedagogy'. ….The idea of 'zone-space' – scope for creativity that can be elasticised, or 're-scaffolded' to suit the learner's capacity at any given point in her learning narrative – gives a renewal of meaning to the Vygotskian 'zone of proximal development'. It also pre-supposes a high level of professional commitment, judgment and skill on the part of the 'learning guide' who is working alongside learners. (Crick, 2009, p. 89)

Crick highlights the key elements of this approach to personalised learning, which are also relevant to this study. She argues that the motivational power of the students' personal

connection to the chosen inquiry enables affective engagement, in the process connecting new knowledge to their existing experience, supporting the acquisition of specialist knowledge and skills and understandings. A challenge is however, raised regarding how this methodology aligns to an external curriculum and summative assessment practices. My case study will examine the approach within the school and identify how it aligns to the state curriculum even though it prevails as the focus of the teaching and learning methodology and is not just an isolated approach used part of the time within the institution.

On the Victorian Curriculum and Assessment Authority website (2012), inquiry learning is identified and supported in the ”Victorian Essential Learning Standards” (VELS) as an approach encouraging students to ask questions for investigation across the domains. The website states that inquiry learning can take on many forms, such as integrated studies, issue/problem-based, action led, negotiated or play-based inquiry. The key characteristics are seen as: asking questions, building on prior knowledge and making their (learners’) own discoveries; finding out information from primary sources to answer questions and develop deep conceptual understandings and to make connections between ideas, learning domains and experiences. The benefits are seen as: establishing connections across learning areas, being relevant as concepts are learnt in context related to existing knowledge, facilitating management of a crowded curriculum, and supporting children to become autonomous learners. Planning is seen to be achieved through teachers being informed of students’ interests, needs and questions and planning appropriate teaching and learning experiences as part of units of study appropriate to particular cohorts of students.

The thinking curriculum is a domain within the VELS and is another focus of literature related to inquiry learning. I will briefly explore this concept and its part within an inquiry approach.

The ‘thinking curriculum’ (Deakin Crick et al. 2004; Deakin Crick 2007; Deakin Crick & Yu 2007; Erickson, 2007; Jansen, 2011; Nuangchalerm & Thammasena, 2009; Tan, 2006) is closely linked to the inquiry approach, detailing the thinking strategies engaged within the process. Erickson (2007) conceived a concept-based curriculum and instructional design for a ‘thinking classroom’ described as having a three-dimensional focus on knowing factually, understanding conceptually and being able to do skilfully. Erickson states, “Our senses, emotions, physical involvement and environmental context all play a critical role in the development of intelligence” (p. 9). “The ability to transfer knowledge and skills to new or similar contexts is evidence of deeper understandings and higher order thinking” (p. 13).

Erickson (2007) quotes Ritchart regarding the development of “intellectual dispositions”, “Ritchart cautions that we are teaching for the wrong thing- that we need to keep our focus on the development of “ intellectual disposition” that develop strong “intellectual character” (2002, p. 10)” (p. 15). The idea of intellectual dispositions is framed under the categories of creative thinking (open minded, curious), critical thinking (seeking truth and understanding, strategic, sceptical) and reflective thinking (metacognitive). Intellectual character is defined as the patterns of behaviour, thinking and interaction that are shaped and displayed over time.

Erickson claims that the ability to reflect critically on new information, consider and question alternative points of view, intuitively and openly look for patterns and connections between elements are the characteristics of open mindedness. Curiosity is seen as driving the development of intelligence. “It is the “on” switch for learning and the gateway to creative problem solving” (p. 15). She also notes that emotional engagement is important as it aids developing deeper understandings and that creative thinking generates an emotional response because the children “tap the personal connection to experience” (p. 15).

Erickson (2007) also quotes Paul and Elder's (2004) analysis of critical thinking as involving questions of clarity, accuracy, precision, relevance, depth, breadth, logic, significance and fairness. Conceptual thinking, on the other hand, is seen to require the ability to critically examine factual information; relate to prior knowledge; see patterns and connections; draw out significant understandings at the conceptual level; evaluate the truth of the understandings based on supporting evidence; transfer the understanding across time or situation; and use the conceptual understanding to creatively solve a problem or create a new product, process or idea.

Within the case study school, the examination of aspects of the thinking curriculum including, as described, creative thinking (open minded, curious), critical thinking (seeking truth and understanding, strategic, sceptical) and reflective thinking (metacognitive), as well as the focus on the engagement of the learners, led to the focus on inquiry learning. However it is my argument again in this thesis that the analysis of these elements is required within the context of the whole practice and its interrelated elements.

3.3.6 Conclusion.

This section (3.3) has highlighted the complexity in interpretation of the notion of 'inquiry', which in this literature review has had a focus on constructivist principles of learning, and in some cases includes the integration of social constructivist principles through the concepts of the role of the teacher in scaffolding and facilitating learning. The investigation of this approach within my study from the perspective of the cultural historical elements in play within the practice of the school involves examining the relationship among 'scientific and everyday concepts', 'intra and inter psychological functioning', the 'zones of development', the 'social situation of development', motives development, and the relationship between

emotion and intellect within this context of inquiry. It seeks to understand the links of this process approach to inquiry with the students' understandings, participation and development. The community context in which this process occurs is also a critical element of the practice. I examine the literature related to community and inquiry in the next section.

3.4 Communities and Inquiry

'Community' is becoming an important part of educational discourse within a globalised society. The concepts of community of practice (Wenger, 1998), learning community (Peterson, 1992), community of learners (Rogoff, Matusov & White, 1996), fostering communities of learning (Brown & Campione, 1990) are all evidence of this focus. How and why the concept of a 'community of inquiry' may be implemented within an educational institution differs depending on one's theoretical and philosophical beliefs. The concept of community is a concept demonstrated in the literature in varying ways dependent on the writer's perception of participation, understanding and development. The practice of the case study school is described using the term 'community' within their inquiry approach. I now review the literature on the history and approaches to the concept of community and theoretical comparisons of these approaches.

3.4.1 History.

The notion 'community of inquiry' has its origins in the work of Charles Sanders Peirce (cited in Parkdales & Girod, 2006 p.299). Peirce (1839–1914) was both a scientist and a philosopher and these dispositions led to his development of understandings regarding the links between the method of science and philosophy. It was Peirce's understanding and criticisms of Cartesianism, described as viewing the mind as an inner space which directly captures ideas, which when undeniably perceived, constitute knowledge; that led to a perception that we all

begin with prejudices within our thinking which in turn inspired his notion of a 'community of inquiry'. Pierce uses the term 'community of inquiry' as the idea of people coming together to critique ideas and hypotheses. He used the terms 'community' and 'inquiry' to refer to a group of individuals (most often scientists) using an interpersonal method to determine outcome-based results.

Peirce (1955) states, "The opinion which is fated to be ultimately agreed upon by all who investigate, is what we mean by the truth, and the object represented in this opinion is the real. That is the way I would explain reality (p. 38)" (cited in Pardales and Girod, 2006, p.301). Inquiry, for Peirce, is embodied in the scientific method of arriving at conclusions through reasoning. The community of inquirers, using the approach of scientific investigation, serves as the mediator of standards and the validation for the production of reliable knowledge.

Kennedy and Kennedy (2011) examine the history of a "Community of philosophical inquiry" (CPI).

> Genealogically, CPI as understood here is associated with the earlier Socratic dialogues of Plato, and more recently, C. S. Peirce (1966) and John Dewey (1916, 1938), and their understanding of inquiry as ongoing conceptual reconstruction. Psychologically and epistemologically, it is associated with Dewey's collaborator George Herbert Mead (1934); Lev Vygotsky (1978), his colleagues—most particularly Aleksei Leontiev and his 'activity theory' (1978)—and that group identified as neo-Vygotskian (Mercer, 1994), for example Rogoff (1990), Lave and Wenger (1991), Wertsch (1991), and Davydov (1988); with Jean Piaget (1970); and more recently with self-organising systems and communication theory. Mead is important as an influence on CPI theory and practice in his claim that primary meaning arises out of social interaction and is negotiated through language, and that self/subjectivity is an interpersonal construct through and through; Piaget in the sense that cognitive development is an equilibrative process involving the ongoing reconstruction of

> cognitive schema; Vygotsky, Leontiev, and Davydov in the sense that habits of thought and belief, including the skills and dispositions of critical thinking used in CPI, develop from the interaction between the *inter*psychic and the *intra*psychic planes, and that CPI is in fact a collectively constructed zone of proximal development; systems and communication theory in the sense that CPI can be understood as an emergent dynamic whole in continual self-reconstruction (Lushyn and Kennedy, 2000; Kennedy and Kennedy, 2010).' (Kennedy & Kennedy, 2011, p. 5)

Therein lies the complexity in understandings of the approach, here described as involving elements from constructivism, cognitive theory and cultural historical theory. An important consideration for the understanding of my study is indicated by the following questions: How can an approach be interpreted theoretically using varying theories of learning, while the various elements of the approach are enacted within the educational practice using similar terminology of description? How can a dialogue take place when participants have different theoretical perspectives of the key elements of how learning is occurring, including the roles of the participants, the process of development of new understandings, development as intellectual and emotional growth, and the idea that all of these lead to the development of identity, personality and a sense of self?

In the next section I review several concepts used in community approaches found within the literature. In practice Peirce's model of 'community of inquiry' can describe not only communities of scientific inquirers, but also communities of historical inquirers, philosophical and psychological inquirers, as well other discipline-based communities of inquiry. The challenge here to the concept of a 'community of inquiry' is that each of these fields brings with them a different set of developed practices and beliefs, which influences the process. Just as science and philosophy were brought together in the critique of the Cartesian perspective on

knowledge, by Peirce's model of a 'community of inquiry', by an understanding of how members of that community might differ in their thinking and knowledge.

3.4.2 Approaches to the concept of community.

3.4.2.1 Community of philosophical inquiry.

Lipman (1991) defines the elements of a community of inquiry as,

> Thus we can now speak of converting the classroom into a community of inquiry in which students listen to one another with respect, build on one another's ideas, challenge one another to supply reasons for otherwise unsupported opinions, assist each other in drawing inferences from what has been said, and seek to identify one another's assumptions. (p. 15)

Lipman (1991) defines nine mechanisms of community formation that constitute the key elements of Community of Inquiry highlighting the *ways* a group of students and a teacher becomes a community.

1. Group solidarity through dialogical inquiry

2. The primacy of activity and reflection

3. The articulation of disagreements and the quest for understanding

4. Fostering cognitive skills (e.g., assumption finding, generalization, exemplification) through dialogical practice.

5. Learning to employ cognitive tools (e.g., reasons, criteria, concepts, algorithms, rules, principles)

6. Joining together in cooperative reasoning (e.g., building on each other's ideas, offering counterexamples or alternative hypotheses, etc.)

7. Internalization of the overt cognitive behavior of the community (e.g., introjecting the ways in which classmates correct one another until each becomes systematically self-corrective)—'intrapsychical reproduction of the interpsychical' (Vygotsky)

8. Becoming increasingly sensitive to meaningful nuance of contextual differences

9. Group collectively groping its way along, following the argument where it leads. (p. 242)

Pardales and Girod (2006) state that education should empower children to be thoughtful about the lives they lead, and that philosophy supports this goal. Philosophical inquiry involves the consideration of different perspectives through discussion, and it teaches ways of reasoning about the world that enhance the students' abilities to think critically, deliberately, and imaginatively about their worlds. The means by which philosophical inquiry is implemented in elementary schools is described as a curriculum based on philosophical novels that students and teachers read together in teacher-led *communities of inquiry*. The role of the students is highlighted as an important aspect of the approach as it is the students who choose what is interesting and raise issues for discussion. Pardales and Girod (2006) declare,

> In this environment, students are actively responsible for creating and sustaining discussions, and are confronted with their own thinking and the thoughts of their fellow students in an environment of mutual respect with an accomplished inquirer (the teacher). Discussions about reality (metaphysics), what is right (ethics), and language are common topics for inquiry. In the end though, it is the process of inquiry. (p. 303)

Kennedy and Kennedy (2011) discuss Lipman's use of literature as part of a community of philosophical inquiry; she used "Philosophy for Children novels and manuals" comprised entirely of questions clustered around the concepts the literature offers for examination. This curriculum prefers the stimulus of a story over the textbook, as the latter is seen as having a focus on being a 'book of answers', in contrast to the story as a "provoker of questions". Any question the textbook might present is a rhetorical one – a question to which the answer is already known – whereas a novel, being a narrative, makes it possible to provoke a dialogical, non-linear, contextually situated practice of group debate and discussion. The inquiry process is used in deliberation of character and plot. It can provoke the emergence of questions, and the dialogue that those questions trigger. A key element here relevant to this study is the use of dialogue to provoke the analysis for the questions generated, and the questions themselves. The stimulus has relevance to the context and is explored through the examination of relevant concepts, involving questioning and associated dialogue. The movement is from rhetorical questions around already known facts and answers to the exploration of concepts with relevance to the participants' interpretation and interactions with the world. The importance here is the noted link between everyday knowledge and scientific knowledge within the inquiry approach and the development by the individual and the group of conceptual understanding within a system of interrelated concepts.

3.4.2.2 Concept investigations within CPI.

Kennedy and Kennedy (2011) also define philosophical inquiry as an inquiry into *concepts*, which are always to some extent cultural and historical artefacts, and found in relational networks. Concepts are seen to have conscious and pre- or subconscious elements and as such they can harbour unexamined or even unrecognised assumptions. The relevance of concepts to inquiry is defined by Kennedy and Kennedy (2011) as,

> Usually common, central, and contestable concepts are already problematised in our own inner lives anyway through the contradictions that emerge through everyday experience, and as such, we are existentially primed for this moment. Another major impetus for problematisation may be our common interest in resolving the tension between our multiple versions of the same concept through entering dialogue, where we can take advantage of the shared underlying structures of our concepts, which are linguistic and logical, in order to find points of convergence of meaning, and where we realise that, although they are marked by difference, concepts are neither infinite nor without constraints. (p. 12)

The use of dialogue to resolve the tension caused by multiple perspectives of a concept under investigation is an important element of a community of inquiry, however how this can be done with young learners is largely unexplored in the literature and will be examined within the case study.

Kennedy and Kennedy's (2011) perspective on this process involves making propositions that seek to universalise concepts like truth, justice and beauty, self, thinking and so on – that is, to reach a justified agreement or disagreement about the necessary elements of each concept, and about the principles through which the concept is applied, or lived, in a world consisting of objects, persons, and experience. The process often involves the de- and re-construction of the concept, through seeking a consensus about its use and relevance, and what the criteria for applying it in experience are. "The felt teleology of CPI, then, is to put back together what, with the attempt to identify and characterise it, has been taken apart" (Kennedy & Kennedy, 2011, p. 8). This involves the deconstruction and reconstruction of the concept both on an individual level and a collective level. The aim of educators is through the re-construction of the concept to make visible the concept in its application within human action and interaction, with the implication that it enables people to be more self-aware and reflective about their

experiences. “The fact that the process is never completed is in fact a mark of philosophical *praxis*: half-reconstructed, the concept re-enters human practice, where it is challenged by context and experience to justify the new understanding of it” (p. 8). Kennedy and Kennedy’s description of the de- and re-construction of the concept is congruent with Vygotsky’s concept of the development of consciousness of concepts. The concept examination by both the individual and the collective is aligned to the concepts of inter- and intra-psychological functioning. These key elements of cultural historical theory were detailed in Chapter Two and are examined as part of the analysis of the outcomes of the practices within the community.

3.4.2.3 Development of the community vs. development of the individual.

The relationship between the individual and the community is a key element of examination within the analysis of the school practices. Kennedy and Kennedy (2011) describe this process as, “an approach to agency and intersubjectivity” (p. 9). The relationship involves the communication and endeavour to coordinate varying points of view, types of thinking, and experiences of the world. The authors describe the process as “a distributed intelligence” (p.9), as the contributing elements through which the argument is constructed – both cognitive and dispositional – are not located in one person, but are potentially present in each participant and are expressed through interaction and dialogue. The work of the group involves both cognitive and emotional aspects which together form a “democratic collective subject” (p. 9), involving the dispositions to dialogue, mediation, collaboration, communication, power-sharing, equality, self-organisation and self-correction. The inherent relationship between three levels of subjective activity involves the processing of the individual, the processing of the collective and the work of reconstruction of concepts in and between these two systems through a collaborative process. The relevance here to my case study is the process of *interaction* and *exchange* involving both the *cognitive* and *emotional* work of the group as a

democratic process based on mutual influence, reflecting the positioning of the participants alongside each other. My research seeks to examine the variety of possible positionings of the participants and their influence on the outcomes for the individual and the collective as well the developing practice of the community.

3.4.2.4 Community of practice.

Important thinkers have argued that all educational approaches have as their goal student learning however what is learnt differs. The child's participation structure in their learning defines what is learnt (Lave & Wenger 1991; Rogoff 1990; Wertsch 1991).

Lave and Wenger (1991) developed the term a "community of practice", which is when a group of people who share a common interest, learn together through interactions and as a result improve their practice. The formation of the community is not always intentional; "learning can be the reason the community comes together or an incidental outcome of member's interactions" (Wenger, 2006, p. 1). Three criteria are needed for a 'community of practice', a shared domain of interest, a community who are actively participating together in activities and discussions and who have developed a shared practice with a shared repertoire of resources. Wenger raises two questions around the community of practice in schools: How can educational experiences be organised so that they ground school learning in practice through participation in communities around subject matters? Secondly, How can the experience of students be connected to actual practice through peripheral forms of participation in broader communities beyond the walls of the school (2006, p. 4)?

It is my contention that as a community of learners, who have developed a community of practice within the school setting of the case study, children, teachers, parents and mentors are active in structuring the inquiry. The process is collaborative with all participants assuming

the role of learners; adults are responsible to guide the process with the children responsible for learning to participate within the collaborative process and to manage their own learning. (Brown & Campione, 1990; Dewey, 1916; Matusov and Rogoff, 2002) "In a community of learners, students appear to learn how to coordinate with, support, and lead others, to become responsible and organized in their management of their own learning, and to be able to build on their inherent interests to learn in new areas and to sustain motivation to learn" (Rogoff et al.1996, p. 410).

Matusov (2001 pp. 386–387) analysed a classroom organised according to the philosophy of a 'community of learners'. He points out the need for a shared focus of attention, including the shared object of the activity, shared communication involving designing a *recursive communicative process* (citing Rommetveit, 1989) in which children are interested in and build on each other's contributions; and authenticity of the activity for the participants to ensure engagement. For the activity to be authentic there must be a relationship between the activity and other aspects of the participant's life (citing Dewey 1966). Engagement is achieved through "*recursivity of participants'* interests – development of the activity generates whole new waves of emotional, volitional, moral, and intellectual reactions in the participant that promote the activity further (Engeström, 1990; Leont'ev, 1981; Vygotsky, 1978)". (Matusov 2001 p. 387)

It is within this description of a community of learners that this study found inspiration and a focus for investigation. When the community of learners enters into dialogue together around concepts, however it simultaneously enters into meaningful experiences to enact the collective process, collaborating together in using the new understandings.

3.4.3 Theoretical comparisons.

Historically the development of curriculum has been a one-way process; we have communities of discipline-based inquirers, such as history, philosophy, or mathematics, where knowledge constructed in the disciplines gets transformed into curricula for students in schools. However within a community of inquiry in classrooms, the community's mandate requires that student interest, and mutual respect and concern, are key elements of the community. This requires that the members of the community are active in determining to some degree the constitution of the community. The shared understanding among the educators of the theoretical perspectives within this process is of significant importance.

One perspective that is embedded in the notion of learning communities is the constructivist learning theory, which embraces the learner's point of view (Garmston & Wellman, 1995; Hancock, 1997; Harada, Lum & Souza, 2002/2003). Community practices are built on an understanding that students learn by actively constructing, rather than simply acquiring knowledge. Harada et al. (2002/2003) quote Graves (1992) who defines a learning community as 'an inherently cooperative, cohesive and self reflective group entity whose members work … toward common goals while respecting a variety of perspectives values and lifestyles'."(p. 94).

A second perspective embedded in the notion of learning communities is offered by Cultural Historical Theory. This perspective is based on the principle that internalisation occurs in an inseparable unity with externalisation as much on the individual as on the group level, through a self-regulative process. (Davydov, 1990; Matusov, 2001; Vygotsky, 1978). Vygotsky's notion of the group as located in a zone of proximal development is a recognised explanation

of how the critical moves emerge, are reinforced, and become progressively conscious in the development of a community of inquirers.

It is the second description of a 'community of learners' that aligns to the research case study as it is theoretically robust, foregrounding cultural historical theory. The community of learners enter into dialogue together about concepts, relevant to their context, however also together enter into activities to enact the collaborative process of inquiry, collaboratively using the new internalised concepts and learning in authentic ways.

3.4.4 Conclusion.

A challenge throughout the discussion of the inquiry approach to curriculum and the concept of a community of inquirers is the use of the approach to enact government curriculum. This point is highlighted in the following quote by Pardales and Girod (2006):

> teachers can still try to have *inquiry* be a sincere part of the day by limiting the topics of possible inquiries to those mandated by curriculum developers. The work of Ball (1993) and Levine-Rose (1999) are exemplary on this point. While we consider this somewhat of a compromise, to act otherwise could compromise many students in an environment where their futures are heavily determined by high-stakes tests. (p. 308)

Kennedy and Kennedy (2011) discuss the possible models for addressing this challenge.

> At the very least, three models for organising inquiry into the common, central and contestable concepts within the disciplines are possible – a single-discipline, an inter-disciplinary, and a whole-curriculum approach. Each of these corresponds to a more general organisational model for curriculum planning – that is, within a single classroom, between classrooms, and across the whole school. Each can function more or less emergently – meaning that the concepts are not pre-planned, but arise in the course of the inquiry – and more or less democratically, meaning that the concepts and

> the questions are generated by the students themselves, with the teacher as co-participants. (p. 39)

The case study school aimed to implement a whole-curriculum approach across the whole school. Kennedy and Kennedy (2011) describes the characteristics of a school which takes this approach,

> In this school-wide model, philosophy, after dispersing itself among the disciplines, returns to the *agora* – the public space – which is its rightful place in an authentic democratic community, and deliberative communal dialogue functions as the emergent compass, the tutor, and the normative horizon of that adult-child collective called 'school'. As such, the utopian possibilities that CPI offers for the reconstruction of childhood education are significant, but that is matter for another article. (p. 40)

This possibility that a community of inquiry approach offers for the re-creation of childhood education, is the topic of study for this case study. In this study the approach is embedded in all elements of the institution. Unpacking the complexity of the approach and analysing its interrelated elements form a focus of this study. The complexity of the terminology around '*inquiry*' and a '*community of inquiry'* creates a dilemma in the enactment of the approach within educational institutions, in particular where dialogue between educators is concerned. New terminology, I believe, is a requirement to support the interpretation of the new approach, supporting and leading to possibly new understandings of education within institutions.

3.5 Relevant Research into Transformational Teaching and Learning

The present study sought to document and analyse a case study school during a time of curriculum reform. As such, it is important to analyse research that examines the transition and transformation of innovative schools. However it is beyond the scope of this thesis to examine in depth schools that have attempted to transform their practice in all aspects of its complexity.

I do, however, examine six examples followed by an analysis of the literature on a program aligned to cultural historical theory implemented in an after-school program in Harlem, New York.

3.5.1 MET schools.

The MET schools throughout the United States of America have as their tenet, "one student at a time" (Washor, 2003) and their school design ensures small groupings of students, including breaking a large school into smaller sub-schools. The student is viewed as an active participant in their learning, with each student's learning personalised by teachers, mentors and parents. Outside experiences beyond the school are highly valued. "Rigor, Relevance and Relationships" are three key aspects of the program. Rigor is achieved through students learning in real contexts. For elementary students this is through project-based learning and for high school students this is through internships. My analysis of this approach notes its emphasis on theory and abstract concepts being applied to real life, thus developing connections between the student's scientific concepts and everyday concepts. Relevance is achieved through personalised learning plans based on students' interests and passions. A close relationship is developed between the student and their advisor, who understands the learner's interests, strengths, weaknesses and learning style.

Washor (2003) posited five areas of research in the theoretical and conceptual framework for researching and designing small school facilities that support interest-based learning: interest and motivation; small schools; school to career – defined as the use of worksite resources to make links with learning back at school; educational design; and learning environments both inside and outside of the school. Washor (2003) explains that the work of James (1890), Dewey (1896) and Montessori (1966) inspired the belief that education should begin with the

student's interests. Washor quotes Wilson (1998, p. 292) who describes how students use their interests through hands-on experiences.

> Almost all children who prove to be 'successful long-term learners' initiate a series of successful professional apprenticeships before reaching their teens. This is the ideal time for apprenticeship: the unique adult-child relationship, usually outside the immediate family, in which the child's imagination attaches to mature goals and to a mentor who's caring both about the child and about the activity can have enormous long-range consequences.

This reflects Rogoff's concept of transformation through participation. Washor also refers to Schank (1999) who outlines the need for three environments for learning, collaborative work (social), focused work and hands on project work. Washor's analysis of the MET schools supports my analysis of the case study school in the use of descriptive terms of key guiding principles such as interests and motivation, learning environments, mentor relationships, respect, relevance and rigour. The intent of my analysis is to identify and describe the key elements and also to theorise their purpose and their relationship to each other.

3.5.2 St Louis Reggio collaborative schools.

> They [children] are autonomously capable of making meaning from their daily life experiences through mental acts involving planning, coordination of ideas, and abstraction ... The central act of adults, therefore, is to activate, especially indirectly, the meaning-making competencies of children as a basis of all learning. They must try to capture the right moments, and then find the right approaches, for bringing together, into a fruitful dialogue, their meanings and interpretations with those children. Loris Malaguzzi (Gandini, 1993, p. 55).

Supported by the Danforth Foundation, ten schools in St Louis city and county began a study to adapt the Reggio Approach to their programs. In the study *Teachers' Perceptions of*

Pedagogic Innovations: Barriers and mechanisms for successful implementation, Entsminger (1994, cited by Cadwell, 1997, p.1) concluded her study with a discussion of the teachers' understanding of some of the conditions needed to adapt the Reggio approach in the schools in St Louis during the study from 1992 to 1995. The conditions included strong support from the administrations, teachers' willingness to grapple with challenging issues involved in the theory and practice of teaching and learning, and the commitment of a group of teachers to meet and review and develop their work within a collaborative context.

St. Louis Reggio Collaborative (USA) was formed in 1995, involving three schools from the research project creating a network for study and support of the Reggio Emilia early childhood approach from Italy. The schools involved were The St. Michael School, The College School, and Clayton Schools' Family Center, in Missouri. Dr. Louise Cadwell completed a research internship in the preschools of Reggio Emilia, Italy in 1991-1992, and was part of the research project at "The College School" in 1992 to 1995. She states that her focus was "the language children use and the symbols they make as they seek to build relationships with each other, with adults, and with the natural world" (Cadwell, 1997, p.1).

In her book *Bringing learning to life: The Reggio approach to early childhood education,* Cadwell discusses the development of the Reggio Emilia Project. The Movement of Cooperative Education was formed in 1951 influenced by the ideas of Freinet and Dewey led by Bruno Ciari who was appointed by the liberal administration of Bologna to direct the city school system (Edwards, Gandini and Forman, 1993). Ciari and his followers including Loris Malaguzzi believed that "education should liberate childhood energy and capacity" (Edwards et al., 1993, p.16) and promote the development of the whole child, in communicative, social and affective domains. Over the past 30 years the ever-evolving practice has been influenced

by the work of Bronfenbrenner, Montessori, Vygotsky, Piaget, Erikson, Hawkins, Maturana, Varela, Bateson, Gardner and Bruner (Cadwell, 1997, p. 4).

Cadwell (1997) drew on Edwards et al. and their account of Gandini's ideas to identify the key elements of the Reggio Emilia approach:

> *The Child as the Protagonist:* Children are strong, rich and capable. All children have preparedness, potential, curiosity, and interest in constructing their learning, negotiating with everything their environment brings them. Children, teachers and parents are considered the three central protagonists in the educational process. (Gandini, in Edwards et al., 1993)
>
> *The Child as the Collaborator:* Education has a focus on each child in relation to other children, the family, the teachers and the community rather than on each child in isolation. (Gandini, in Edwards et al. 1993) There is an emphasis on working in small groups. This practice is based on the social constructivist model that supports the idea that we form ourselves through our interaction with peers, adults, things in the world, and symbols.
>
> *The Child as the Communicator:* This approach fosters children's intellectual development through a systematic focus on symbolic representation, including words, movement, drawing, painting, building, sculpture, shadow play, collage, dramatic play, and music, which leads children to surprising levels of communication, symbolic skills and creativity. (Edwards et al., 1993)
>
> *The Environment as a Third Teacher:* The design and use of the space encourages encounters, communication, and relationships (Gandini, in Edwards et al., 1993). There is an underlying order and beauty in the design and organization of all the space in a school and the equipment and materials within it.
>
> *The Teacher as Partner, Nurturer and Guide* (Edwards et al., 1993)*:* Teachers facilitate the children's explorations of themes, work on short and long term projects

and guide experiences of joint, open discovery and problem solving (Edwards et al., 1993). To know how to plan and proceed with their work, teachers listen and observe the children closely. Teachers ask questions, discover children's ideas, hypotheses, and theories and provide occasions for discovery and learning (Gandini, in Edwards et al.,1993).

The Teacher as the Researcher: Teachers work in pairs… they engage in continuous discussion and interpretation of their work and the work of the children…. Teachers see themselves as researchers preparing documentation of their work with children, whom they also consider researchers. The team is further supported by a *pedagogista* (pedagogical coordinator) who serves a group of schools (Gandini, in Edwards et al., 1993).

The Documentation as Communication: Teachers' commentary on the purposes of study and the children's learning process, transcriptions of children's verbal language, photographs of their activity, and representations of their thinking in many media are composed in carefully designed panels or books to present the process of learning in the schools. The documentation serves many purposes. It makes parents aware of their children's experience. It allows teachers to better understand children, to evaluate their own work, and to exchange ideas with other educators. Documentation also shows children that their work is valued. Finally it creates an archive that traces the history of the school and the pleasure of the process of learning experienced by the children and their teachers (Gandini, in Edwards et al., 1993).

Parents as Partners: Parent Participation is considered essential and takes many forms. The ideas, and skills that the families bring to the school as well as the exchange of ideas between parents and teachers, favor the development of a new way of educating, which helps teachers to view the participation of families not as a threat but as an intrinsic element of collegiality as the integration of different wisdoms. (Cadwell, 1997, pp.4-6)

The Reggio Emilia approach has had a strong influence on the practices within the case study school, outlined in Chapter Five, with each of the elements listed above developed and implemented within the school context. A challenge identified however is that a constructivist theoretical basis did not adequately explain the outcomes of the practices used and did not provide a catalyst for the teacher research to further develop the practice, which was the aim of this case study research examining the theoretical understanding of the principles and practices in play within the institution.

3.5.3 Discovery School NZ.

Discovery 1 was a public primary school for Years 1 to 8 in Christchurch New Zealand, prior to the devastating earthquakes in 2013 (it is currently temporarily located at Aidenfield in Halswell). The school was on the third floor of a department building in the city's central business district. This broadened the children's learning contexts by enabling them to draw on the resources within the city, after having earned a trust licence. The focus of the school is to discover and develop children's interests and to manage the children's learning through negotiated learning goals through a partnership between the parent, advisor (teacher) and child. A collaborative community project researched: the initial and developing beliefs, skills, and strategies of the parents, advisors and students; the discovery approach to learning in varying learning contexts; the negotiation between the New Zealand curriculum and the discovery learning approach and the effects of educational and socio-cultural knowledge on the school's development. (Boyask, McPhail, Kaur &. O'Connell, 2008) This case study is aligned to the case study within my research as it took account of the underlying beliefs, participation roles and practices of the discovery learning approach aligned to the NZ curriculum. A further focus of my study will be the theoretical explanations of these and other identified characteristics of the practice.

3.5.4 'The OC' School.

'The OC' which stands for, *Open Classroom* has been so called due to the confusion and misconceptions the full title can cause, such as visions of large undivided spaces and freedom of choice (Rogoff et al., 2001, p. 8) .The school in Salt Lake City, Utah opened almost thirty years ago and caters for children 5 to 12 years of age. Rogoff et al. (2001) provide a comprehensive account of the school and its principles, from which I set out some key points, The 'community of learners', comprising parents, teachers and children, developed the principles underpinning the philosophy and the structures for its implementation. It is a requirement that parents, called co-opters, participate in instruction for three hours a week for each child enrolled and through this participation develop in their understandings of the principles underpinning the learning. The community involves building relationships through common endeavours, with the crucial element of adapting to new needs and ideas through the shared development of new cultural practices. All participants are viewed as learners, however, the children's learning is the priority and is achieved by building on their interests through collaboration. New techniques and ideas are reflected upon in light of the school's beliefs, to ensure they are coherent and can be integrated into the shared philosophy. The school day is planned flexibly, allowing for an immediate response to interesting occurrences. Usually children stay with the same teacher for two years within a multi-aged group. Children plan their day, combining required and optional activities. Class meetings occur in circles throughout the day for discussions leading to new learning opportunities and for whole group instruction around a collaborative area of investigation. A co-opter, teacher or student organise small group activities for the children to participate in. The children learn to take responsibility for their learning, and to also contribute to the learning of others. Participants in

the OC School, involved in the approach based on socio-cultural principles, have documented their involvement in a publication. (Rogoff et al, 2001).

Matusov and Rogoff (2002) completed observational studies of co-opters in the OC, to investigate their philosophical beliefs about teaching and learning. Their findings indicated that parent participants with limited experience would usually adopt a one sided approach, with either adult or child directed activity, however parents with several years of experience were more likely to use collaborative techniques such as negotiation with and building on children's interests. The conclusion from their research is that adults need to participate in the educational philosophy to develop an understanding of the approaches. The adult participation as part of a community of learners is the means to maintain and develop the philosophical educational beliefs of the community and needs to be embedded in the institutional practice.

Practices within the approach at the OC School are similar to those of the case study school, and the research is useful in supporting the identification of the key elements in play. The aim of this case study is to make explicit the relationship between these elements.

3.5.5 Golden Keys Schools.

Further research by Elena Kravtsova and her colleagues on Vygotsky's theory of play has been conducted in the Golden Keys School in Russia, which foster development through play-based programs for preschool and school-aged children. Fleer (2010) summarises,

> In drawing upon the seminal works of Vygotsky *(collected works)* they have developed an approach to teaching and learning that centres upon the active role of adults in children's play for fostering higher psychological functioning, and where creativity and imagination are integral to concept formation. (p. 108)

The unity between the family and the educational institution is a priority. Fleer (2010) quotes:

> in generally accepted models of education there is not only a separation of teaching from upbringing, but also a one-sided domination of the values of teaching over the values of cultivating the child's personality and emotional well being (Kratvsov & Kravtsova, 2009:203). (Fleer, 2010, p. 108)

In the program, children in multi-aged groupings of 15-20 children participate with two adults (pair pedagogy) in the activities. The program for children aged 3-6 consists of experiences based on guided conceptual themes: a focus on time, utilising the theme of time travel touching down at different time intervals, and also orienting themselves in space; materials usage, involving different fields of art and reflection of their experiences and exploring unfamiliar cultures (Fleer, 2010). The experiences aim to connect with the children's zones of potential development (Kravtsova, 2008b), creating a social and cultural experience that lies within the child's possible engagement.

Subject positioning is an important approach involving the teachers positioning themselves alongside the children in collaboration, above the children in having more knowledge or skills, with the children (the primordial 'we') or independently of each other. These approaches are achieved through the use of pair pedagogy, with two teachers planning for their collaborative interactions with the children. (Kravtsova, 2008a) This approach enables children to take part in different types of communication and provokes different types of connection to learning and participation within their zone of proximal development. The use of multi-age groupings also enables the children to observe older children leading to possible imitation of the older children within these experiences. The children are supported within the zone of proximal development through pair pedagogy and through use of the multi aged groupings. This special

type of communication called *obshchenie* provokes the relationship between learning and development. (Kravtsova, 2008a)

The creation of events (Kravtsova 2008a) such as "The wolf has lost its fairy tale" with one teacher taking on the role play of the wolf and the second teacher the questioner and provoker places the children in a situation where the subject under investigation becomes their own, another important element of *obshchenie* where learning can lead to development and there is a unity between affect and cognition. Fleer (2010) states,

> Research evidence (see Kravtsov & Rubashkina, 2009) demonstrates that graduates of the Golden Keys School achieve cognitively at a similar level to graduates from other schools, but there is evidence that broader reflective capacities and engagement in community and social life are highly developed. (p. 113)

The embedment of the cultural historical concepts of subject positioning and zones of development provides a great provocation for the further examination of these elements within the case study school.

3.5.6 Developmental schools Netherlands.

Beginning in the middle 1970s, a group of Dutch educationalists and psychologists worked together to innovate Dutch classroom practices influenced by cultural–historical theory resulting in the development of an educational approach that was called (in Dutch) "Ontwikkelingsgericht Onderwijs" and which can be literally translated as development-oriented schooling, now called "Developmental Education" in academic discourse. Developmental Education refers to the theory and practical implementation and ongoing research of cultural–historical theory in Dutch primary schools.

van Oers (2012a) points out that the common goal of a group of teachers, parents, teacher educators, curriculum innovators and researchers from different disciplines (psychologists, pedagogues, linguists, philosophers) was to achieve the development and implementation of a form of education that engaged children in meaningful learning and cultural development in an 'emancipatory' way. They rejected the direct transmission approach as not being a responsible pedagogy for the development of the children. The goal of each member of the group was to develop an organisation of schooling that "would take children and teachers seriously as agents, and provide them with the cultural tools they would need to participate autonomously and (if necessary) critically in the cultural practices of their community" (van Oers, 2012a, p. 59).

The combination of both theory and practice in one educational methodology can be identified within the approach. The focus was that the innovation was theory driven, however at the same time could and must inform the theory, which was initially challenging to teachers, though it was a process that was embedded in cultural–historical theory. van Oers (2012a) supports this claim, noting that

> from Vygotskij's essay on the historical meaning of the crisis in psychology where he also argues that a theory of human development can only demonstrate its value in how it supports the development of practice and can learn from these practical transformations for the elaboration of the theory (Vygotskij, 1982, p. 387–388; see also Chaiklin, 2011). (van Oers, 2012a, p. 59)

van Oers (2012a) outlines Wardekker's (1986) development of a methodological point of view on learning process between researchers and practitioners which emphasised that the process was not linear; rather, he saw it as a multi-dimensional, collaborative, complex process where both researchers and practitioners negotiate their meanings with regard to the proposed

artefacts and plans. Secondly, van Oers outlines that Wardekker (1986) pointed out that the process involved the formation of a common conceptual language that enables the stakeholders to get constructively involved in critical dialogues and negotiations of meaning regarding the intended innovation. The development of common conceptual language to enable the enacting of the approach is an important element and relevant to this case study.

Their approach deliberately involved the use of cultural–historical key concepts including activity, zone of proximal development, cultural tools, mediation, dialogue and participation. Two key areas of focus are detailed by van Oers (2012a):

> [Firstly,] How do we realise meaningful learning in primary school classrooms? In general, the notion of meaningful learning is based on Leont'ev's distinction between cultural meaning (the cultural value) and sense (personal meaning, value in the light of personal motives and interests). (p. 60)

Meaningful learning within Developmental Education is then considered as learning that integrates the two types of meaning, in particular through the discussion of theoretical language such as i.e. motive, action, tools.

> [Secondly,] How do we integrate assessment and teaching? Teachers want to assist pupils' development on the basis of close ongoing observations and use this information for the planning of pupils' (and their own) learning trajectories. (p. 60)

Again, as discussed in the conclusion of the section on inquiry based learning, the context of assessment of children was set within a government focus on standardised testing of learning outcomes. The focus on assessment within Developmental Education is the use of dynamic assessments, involving teachers exploring both the children's zone of proximal development and the outcomes of their support and teaching. The documentation of these approaches could

then be used to defend their position on assessment in relation to official policies (van Oers 2012, p. 60).

The group importantly defined development in a broad sense as identity development involving "transformations in the whole person, including cognitive, social, emotional, affective, motivational and aesthetic dimensions" (van Oers 2012, p. 60). The teachers in Developmental Education schools in planning take into account the personal sense of learning and the content material to the participants, with a focus on the connectedness of learning and emotion and interests. The challenge however still exists between teacher views of assessment and the official policy, which is a challenge in all school transformation, when the assessment principles are not aligned to the principles of teaching and learning.

Wardekker (2008) also sees identity development as a result of learning that integrates both sides of meaningful learning (both cultural meaning and sense): "cultural elements and tools are not integrated into identity stories as they are, but as the person makes sense of them in the light of previous experiences, existing identity stories, and feelings about her own experience" (2008, p. 159). Teachers assist pupils with the formation of their identity by getting them involved in cultural practices and helping them with appropriating and emotionally evaluating the cultural tools they can use in cultural practices, in and out of school (Wardekker, Boersma, ten Dam, & Volman, 2012).

Activity theory (Leontev, 1978) was elaborated on throughout the theory/ practice research, as the specific configuration of rules, level of involvement and degrees of freedom were examined within activity. This was termed by van Oers the 'format' of the activity.

> Depending on the value of each of these parameters, the execution of an activity obtains specific qualities and process characteristics (chaotic, strategic, pleasurable,

> flexible etc.). An activity, for instance, based on strict sanctioned rules, no involvement, and no degrees of freedom, is typically what we use to call "drilling." On the other hand, an activity based on conceptual rules, interest-driven involvement and some degrees of freedom can be recognised as inquiry. (2012a, p. 62)

The exploration of the 'activity' within the institution within this thesis is an important element when the practice is examined through the institutional lens, exploring the inquiry activity, problem based eLearning and the use of play, which are also part of the activity within the Developmental schools.

The use of play within the Developmental Educational approach involved transformations of themes into playful activities/practices, including roles that employ specific tools. This focus is the basis of the play approach in the younger years. van Oers (2012a) states, "Play can be conceived of as a specifically formatted activity in which there are implicit or explicit rules (acknowledged by the actor), a high level of involvement, and at least some degrees of freedom for the actor" (p. 62).

However, he also states that the continuation of play into the later years of schooling is interpreted as a development of rule governed activities that proclaim the qualities of the play format as a learning activity. This process is achieved through the use of problem-based activities that follow the play format, involving beginning with questions based on interests of the students. The approach involves the students finding answers to their questions through experimenting, discussing, exploring, and negotiating collaboratively with the teacher as a participant in the process, all of which enable simultaneously the development of rules and conceptual understanding in meaningful contexts. van Oers (2012a) states, "Organising problem-based learning in the context of communities of inquiry can be seen as the pupils' emulation of the role of a researcher" (p. 62).

van Overs (2012a) provides an example of this approach with a focus on the concept of imitative participation,

> When, for example, pupils in the upper grade of primary school (age 11) are imitating the role of researchers who want to study the traffic near the school, they have to invent ways of representing their data (for example in diagrams). For learning how to do this, they are highly motivated given their problem, they get guidance from the teacher in learning to understand how to make such graphs, but they also need to master technical rules of drawing straight lines, calibrating carefully, etc. Participating in cultural practices by meaningfully imitating roles in these practices is referred to as imitative participation. The concept of imitative participation solves the problem of imitation as a way of learning which opens new areas of meaningful learning (as opposed to imitation as copying other people's actions). (p. 63)

Imitative participation is also seen as important in the development of literacy and mathematics knowledge through children being invited to take part in well-known cultural practices and experiences, developing emerging needs for cultural tools that may enhance their abilities to participate. The activity format in the higher years of primary schools entails more and more complex (conceptual, moral and technical) *rules;* it begins with meaningful problems and the questions of the children themselves in different subject matter with the goal being the promotion of autonomous and critical inquisitive thinking of pupils in all subject matter domains (mathematics, literacy, history, music etc.). The play format is extended to the playful imitation of inquiry as a way of learning. van Oers (2012b) describes the process and its outcomes.

> For now we assume that the quality of pupils' development under the conditions of their education in the early years is a fruitful basis for pupils' progress into an inquiry-based curriculum, and for finally becoming autonomous and well- informed critical participants in cultural practices. (p. 295)

The practices within the Developmental Schools Netherlands have the goal of connectedness of learning, emotion and interests linking cultural meaning with personal sense leading to identity development. The practices include an inquiry approach involving *conceptual rules, interest driven involvement and some degrees of freedom,* problem based learning and play formatted learning, some of which (those italicised) are aligned to practices within the case study school. The theorization of these practices involving the use of cultural–historical key concepts including activity, zone of proximal development, cultural tools, mediation, dialogue and participation, provides a starting point for the analysis of the practices within the case study school and the relationship between these elements.

3.5.7 Radical local teaching and learning.

Research by Hedegaard and Chaiklin (2005) led to the development of the "Radical Local" teaching and learning approach. The practical research took place in an after school program for children in East Harlem, New York. Many of the families had a historical connection to Puerto Rico. The aim of the program was to develop children's research skills and concepts in the subject areas of history and social science, using content for the investigation that was *central to their lives*. The cultural–historical background of the children's families drove the content selection. The engagement of the children in the instructional activities was achieved through encouraging them to be active in researching their own community and its origins. Concepts developed through the investigations could then influence their everyday perceptions of their lives and their community.

> A key aspect of the approach is for the children to be able to combine their experience with new skills and concepts into a perspective for understanding the important aspects of their history and community practice, in contrast to simply discussing their

> experience or providing children with historical facts that are culturally relevant. (Hedegaard & Chaiklin, 2005, p. 14)

What is termed a *double move* approach considers the relations between everyday concepts, subject matter concepts and local knowledge. The goal of the use of the *double move* in instruction is "to create learning tasks that can integrate local knowledge with core conceptual relations of a subject matter area so that the person can acquire theoretical knowledge that can be used in the person's local practice" (Hedegaard & Chaiklin 2005,p. 69). A conceptual model has been developed involving the dialectic between the child's everyday knowledge and its potential transformation through the understanding of theoretical knowledge. This model addresses a main concern of radical local teaching and learning, "namely to use the general concepts of disciplinary knowledge as a way to develop and refine personal, local knowledge" (Hedegaard & Chaiklin, 2005, p.12). Narrative knowledge is located in conceptual conversations in everyday experiences, whereas empirical knowledge has a focus on categorising learning and is foundational to discipline knowledge. Theoretical knowledge with a focus on logical reasoning and concept formation, uses both empirical and paradigmatic thinking with narrative knowledge to build a relationship between personal knowledge and abstract knowledge. Davydov (2008) argues that "the task of theoretical thinking is to rework the data of contemplation and conceptions in the form of concepts, and thereby to fully reproduce the system of internal connections that give rise to the given concreteness and reveal its essence" (p.100).

Hedegaard and Chaiklin (2005) noted that Radical Local Teaching and Learning is a useful method in pedagogical planning for three reasons. Firstly, children find it motivating because the approach is based on the development of teaching-learning situations that have connections to the learners' local community, which is the source of their everyday

knowledge. Secondly, the focus on connecting subject matter content to aspects from the children's local community enables children to use their prior knowledge in teaching and learning situations. Thirdly, the focus on connecting academic concepts to the children's everyday contexts provides improved conditions for enabling academic concepts to be rich, active concepts that are used by children in their thinking and interactions within the world.

Taking into account children's pre-existing understandings as the initial action within inquiry research learning approach and aligning the research questions to children's interests, are key strategies within the institution practices of the research school. These practices are aligned with the work of Hedegaard and Chaiklin's Radical Local theory. The examination of cultural–historical concepts within Hedegaard & Chaiklin's study, in particular the *double move* between scientific and everyday concepts, is a provocation for the further examination of this concept within the case study school.

3.5.8 Conclusion.

The schools I have examined in this literature review, schools from around the world that have transformed their practices, the MET Schools in the USA (Washor, 2003), Reggio Collaborative schools, St Louis, USA (Cadwell, 1997), Discovery 1 School in NZ (Boyask, McPhail, Kaur &. O'Connell, 2008), Open Classroom school Salt Lake City, USA (Rogoff, Turkanis & Bartlett, 2001), The Developmental Education schools in the Netherlands (van Oers, 2012a), and the Golden Keys Schools in Russia (Kravtsov, 2010) all have several general elements in common. Each community aimed to create a community of practice, with a contextual curriculum, implemented through a participative approach underpinned by a moral purpose to build strong respectful relationships between participants, to provide relevant learning opportunities, to enable active participation, to challenge children's thinking and

activity, to take into account children's interests in planning and to involve parents in the institutional practices.

Each has developed unique, effective strategies in their implementation: in the MET schools, USA (Washor, 2003), it is the connection with local businesses with teachers as facilitators; in the Reggio Collaborative school, St Louis, USA (Cadwell, 1997); the concepts of children as protagonists, the environment as the third teacher, and the teacher as researcher figure prominently; in the Discovery 1 School, NZ (Boyask, McPhail, Kaur &. O'Connell, 2008) the use of exploring the local context and teachers as guides is central; in the OC school, Salt Lake City, USA (Rogoff, Turkanis & Bartlett, 2001), the involvement of parents within the community of learners promotes effective development; In the Developmental Schools, the Netherlands (van Oers, 2012a), play and inquiry are leading activities and in the Golden Keys schools in Russia (Kravtsov, 2010), the concept of the varying positions of the teacher and the use of leading activities involving scenarios are important. The schools differ however in the theoretical perspective which underpins their work: the MET Schools in the USA (Washor, 2003), Discovery 1 School in NZ (Boyask, McPhail, Kaur &. O'Connell, 2008, Reggio Collaborative schools, St Louis, USA (Cadwell, 1997) are influenced by social constructivist theory which has its origins within cognitive theory, while the OC school (Rogoff, Turkanis & Bartlett, 2001), the Developmental Education schools in the Netherlands (van Oers, 2012a) and the Golden Keys Schools in Russia (Kravtsov, 2010) are influenced by the system of concepts within cultural–historical theory. It is the schools influenced by cultural–historical theory that have theorised their practices, and this enables clarity of understanding, implementation and further development of their approaches. The approaches can also readily be applied to new cultural contexts as their practices are conceptually based, such as the use of

leading activities, roles of participants and contextual content. This study's focus is to define these conceptual practices and their relationship.

3.6 Chapter Conclusion

This review of the literature has necessarily taken a complex narrative form, examining the history of approaches to education and examining examples of the approaches from around the world, in order to provide an understanding of the existing research into the approaches to teaching and learning, and the gaps that this study seeks to address.

Firstly, by examining pedagogical approaches to teaching and learning and their alignment to belief structures and theories, I have identified the need to understand the approaches used, within the integrity of their traditions and history and through an examination of their interpretation and resulting implementation in practice. In this study an understanding of these histories, interpretations and practices will be aligned to the theory, which explains the characteristics of the approach and the conditions for its implementation.

Secondly, the examination of the 'inquiry approach' identified the confusion that exists in its theoretical interpretations. I suggest that cultural-historical theory provides an alternative theoretical framework for developing this theorisation, but that this theorisation may require new terminology to describe the approach, in order to enable productive examination and understanding of the practice.

Thirdly, the concept of a 'community of learners' was examined, again identifying varied theoretical perspectives on the same practice. Within the literature the use of co-teaching and collaborative learning was identified, involving the use of questioning and dialogue as a provocation to the development of new understandings by both the individual and the group.

The theorisation of this approach via cultural– historical theory, appears in limited research studies and is usually reported from the perspective of an academic researcher, not from the perspective of 'practice developing research' with the researcher embedded within the complexity of the practice in its wholeness, as identified in the 'Radical Local' teaching and learning approach within an after-school program in Harlem. This thesis will examine the concept of a 'community of learners' within a contextual, participative, community model of pedagogical reform, enacted in a government primary school, within the complexity all of its elements, theorised using concepts from cultural historical theory.

Therefore, this study addresses a gap in the current literature on methodology for contemporary approaches to teaching and learning, by using cultural-historical theory to provide a coherent theorisation of the institutional practices in a government primary school in a particular Australian cultural context and within this context examining in addition to the role of teachers, the roles of children and families.

The following chapter discusses the collaborative methodology used in this study, underpinned by cultural historical beliefs. The collaborative research involved active participation of community members, contemporary and innovative approaches of teachers, parents and children as collaborative researchers and also my role as a full participant in the case study school. The methodology reflects the beliefs about learning in the school context: teacher, parents and children as researchers, contextual learning, authentic learning, building on prior understandings and documentation to make learning visible. This study's implementation of *Practice Developing Research* (Chaiklin, 2006) aims to reverse the tradition of moving theory into practice, to gaining an understanding of theoretical motivation as one participates in the cultural practice.

Chapter 4
Methodology and Method

> The idea is to participate in the dialectic by introducing changes… with a focus on how to support the further development of the transformation. The way to understand (develop knowledge) is the need to participate in this dynamic – not as a matter of logical deduction or imposition – but to respect that a living practice is responding to many conditions and demands, and that these must be understood through participating in that practice and developing solutions that respond to those conditions. (Chaiklin, 2006, p. 14)

4.1 Introduction

The case study school embarked on systemic change in 1996, which involved the development of new pedagogical practices, organisational structures, curriculum design, assessment methods and physical learning environment. Children learn in purpose-designed complexes, with a team of teachers who implement a negotiated curriculum, and collaboratively develop with the children research based projects. Learning is purposeful and contextual, encouraging links beyond school and skilling children to be life long learners.

In this context, the study sought to explore:

- The natural role socio-cultural theory plays in the school's beliefs about a community of learners.
- The importance of teaching and learning within a child's zone of proximal development (Vygotsky) to support the child in reaching their potential.
- The important role of reciprocity between everyday and scientific concepts (Vygotsky) in making learning relevant in the school setting.

- How educational outcomes are the result of an interaction within interpersonal relationships, enabling intrapsychological development (Vygotsky).
- How children, parents and teachers are being 'transformed through participation' (Rogoff) in a contextual, trans-disciplined, research based approach at the school.
- The ways in which teachers, parents and children are positioned as researchers.
- The complexity of the educational practice within the institution.

4.2 Research Questions

The main research questions for this case study are:

What are the theoretical beliefs and pedagogical practices that underpin a participative, community model of pedagogical reform, which were enacted in a government primary school in Melbourne, Australia?

What are the dialectical relations between theoretical beliefs and pedagogical practices enacted in one government school undertaking educational reform?

How are children, parents and teachers being 'transformed through participation' at the school?

Sub questions investigated are:

> How does the interplay between children's scientific and everyday concepts occurring as a result of the beliefs and practice as presented in the school's philosophy?
>
> In what ways did the projects selected for investigation creating a double move?

How are the school principles of negotiated curriculum and collaborative program planning related to the social situation of development?

What is the relationship between the participation structure and motive development?

4.3 Research Paradigm

A research paradigm determines how a problem is formulated and the methodological practice implemented to resolve the problem. It takes into account the researchers' ontological, epistemological and methodological beliefs. This study is located in an interpretive paradigm (Denzin & Lincoln, 2005) is based on relativist ontology, a sociocultural epistemology, and a participative and collaborative methodology, involving full participation by the researcher in the research site.

4.3.1 Perspectives on ontology, epistemology and methodology.

Ontology refers to the concept of being and the concept of individual reality interpreted through, class, gender, race, cultural community, self-concept and experiences (Grix, 2001). This research is based on relativist ontology, based on the belief that there are multiple views of reality. As a researcher I understand that I cannot make an objective observation, it is filtered through my lens of reality (Denzin & Lincoln, 2005). The participants in the research will most likely be unable to give detailed explanations of their motives or intentions as these too are hidden by their sense of the reality of their world (Denzin & Lincoln, 2005).

Epistemology, as theory of knowledge, asks what the relationship between the researcher and the participant is, between the questioner and the known (Denzin & Lincoln, 2005). This research is based on a socio cultural paradigm, where the nature of truth is seen as co-created and developed through a transformation of participation, which in turn creates change in

cultural communities. (Rogoff, 2003) The ongoing relationship of the researcher to the participants as collaborative researchers is continued in this research study. The relationship in this study will be driven by the research questions asked. (Hedegaard, 2008b)

The questions are examined through the methodology. The researcher's relativist ontology and view of knowledge as co-constructed and transformed through participation requires a methodology that can examine the beliefs and practices of learning taking place within the school. In this study, the research to understand the theories of learning in play and the practices enacted by these theories requires a methodology which is participative and collaborative, and requires the full participation of the researcher in the research context. (Chaiklin, 2006)

4.3.2 Qualitative research.

In a study where the theoretical perspective underpinning the research is cultural-historical theory, I believe it is pertinent to trace the history of the research methods defined as qualitative research. To understand the contemporary approaches used within this study, I begin with a brief history. Denzin and Lincoln (2005) note that qualitative research began in the 1920s and 1930s by sociologists at the "Chicago School" to study human group life. At the same time anthropologists, Boas, Mead, Benedict, Bateson, Evans-Pritchard, Radcliffe-Brown and Malinowski developed guidelines for the "field work method" (Denzin & Lincoln 2005). The process involved an outside observer studying the customs and behaviour of another society and culture in natural contexts, with the goal to understand the other. The method then spread to other disciplines, Dewey began to use the method in education. The approach has moved through seven historical moments as outlined by Denzin and Lincoln (2005), who define them as follows. The earliest approach was the traditional (1900-1950), associated with

positivist and foundational paradigms, in which researchers wrote 'objective' reports of the 'other' in naturalist settings. The second was dubbed the modernist or golden age (1950-1970). Blurred genres associated with post positivist arguments prevailed in the period from1970–1986. In this period, various interpretive perspectives developed including, hermeneutics, structuralism and cultural studies, in which researchers learnt from many different disciplines, and rigorous methods were used. The next 'moment' witnessed the crisis of representation (1986-1990), which developed because of a self consciousness about writing up observations and interviews – here the narrative developed. Subsequently, the post-modern 'moment' (1990-1995) arrived, involving experimental and new ethnographics including, narrative and critical research. Action research and participatory research then became a focus. Post experimental inquiry (1995-2000) and the future (which is now – 2000–current) are both concerned with moral discourse. An understanding of qualitative research must be interpreted within this complex history.

Taking into account this history, Denzin and Lincoln (2005, p. 3) provide the definition:

> Qualitative research is situated in activity that locates the observer in the world. It consists of a set of interpretive, material practices that make the world visible. These practices transform the world. They turn the world into a series of representations, including field notes, interviews, conversations, photographs, recordings, and memos to self. At this level qualitative research involves an interpretative, naturalist approach to the world…. to interpret phenomena in terms of the meanings people bring to them.

Burns (1998, p. 12) states "The task of the qualitative methodologist is to capture what people say and do as a product of how they interpret the complexity of their world, to understand events from the perspective of the participants".

In this study, qualitative research is based on the belief that reality is socially constructed and transformed through participation. The variables associated with research questions are complex and interwoven. The research is contextual and the purpose is a theorised interpretation of practice leading to practice development. The researcher is an active participant in the practice under research.

The qualitative research approaches used in this study comprised case study and practice-developing research. Qualitative research uses a variety of interpretative methods. In this study I used: participant observation, collaborative researchers, interviews, artefacts, observations, historical contexts and visual representation. The aim was the use of interconnected techniques to understand and interpret the complex subject. Moreover the techniques were conducted concurrently so that each method would make visible different perspectives to support the interpretation of the subject and lead to future practice.

4.3.3 Strengths and limitations of qualitative research.

The strength of qualitative research lies in access to an individual's meaning of their behaviour including thoughts, feelings and perceptions, in the context of their ongoing daily life: "Qualitative methods attempt to capture and understand individual definitions, descriptions and meanings of events" (Burns, 1998, p. 292). The value of this approach lies in the ability to research agendas of organisations, unravel informal and unstructured processes of organisations and delve in depth into these processes. As findings cannot always fit into existing concepts and categories, the open-minded approach encourages new ways of looking at data – "The strength of qualitative studies then lies in research that is descriptive or exploratory and that stresses the importance of context and the subjects' frame of reference" (Burns, 1998, p. 295).

The limitation of qualitative research is found in dealing with human beings, and involves the fact that events are viewed from the informant's perspective. While the measurement can be considered reliable, it may not be valid, in that it does not measure what it is supposed to measure due to responses being distorted by many idiosyncratic factors. Another challenge is that the variables within the research site are complex and interwoven, and have changing dynamic qualities, as well as involving reality being socially constructed, making analysis and interpretation challenging. According to Burns,

> Abercrombie (1988) argues that social science research can never be objective because of the subjective perceptions of those involved, both informant and researcher; because all propositions are limited in their meaning to particular contexts and particular social groups; because all researchers impose unwittingly their own value judgements and because all observations are theory laden. (Burns, 1998, p. 292)

4.4 Case Study

Burns (1998) outlines that case studies are valuable because they are "intensive and generate rich subjective data [and] they may bring to light variables, phenomena, processes and relationships that deserve more intensive investigation" (p. 365). Historical case studies trace the development of an organisation/system over time and focus heavily on the records and documents (Burns, 1998).

The research in this study is based at a single site government school. It began with a case study of the history and culture of the school. This involved a collection of data with the aim to develop an understanding of the entity being studied, and was completed as preliminary research to the major investigation with the hope it might also provide anecdotal evidence for the study. The study was based on a review of documents, which included research articles,

presentation papers, school reports, student census data, government documents and 2001 government census data. Multiple sources of data helped provide internal validity.

4.5 Practice – Based Research

Seth Chaiklin (2006) introduced a new concept he termed "practice – developing research", which represents a key approach used in this research. The researcher's focus is how to initiate (in this case examine) new effective practice and to develop and sustain conditions to enable the practice to be achieved and then to understand theoretically how this practice was developed. The research focus on the improvement of conditions requires reflection on the whole process, which can only be achieved through full interaction in the process. The researcher participation in the research site prior to the actual collection of the data was key to this process as suggested by Chaiklin (2006):

> The way to understand (develop knowledge) is the need to participate in this dynamic – not as a matter of logical deduction or imposition – but to respect that a living practice is responding to many conditions and demands, and that these must be understood through participating in that practice and developing solutions that respond to those conditions. (p. 14)

The immense amount of data which was analysed was gathered because the focus was on the whole practice as an object of research, and this involved analysing the dynamic *interaction* among the participants and between them and their activity and the interrelationships of conditions in which the activity was achieved. Future development of the practice can occur based on the understanding of the transformations of the interrelationships of conditions and participation that enable the practice to occur and the alignment of these understandings with theoretical knowledge.

A new effective practice had been initiated within the research site, so the aim of the research was to understand the practices developed and the conditions sustained to enable the practice to be achieved and then to understand theoretically how this practice was developed. Chaiklin (2006) explains,

> Practice-developing research reverses the normal way of thinking about the relation between research ideas and practice. The problem is not how to move theory into practice – but how to create working conditions where it was possible to develop an understanding of theoretically-motivated ideas through the way one works in practice. (p. 14)

It is through this aspect that the research study here was taken beyond action research, in that the research is based on theoretical understandings of the practices enacted. Once the data were analysed to determine the beliefs and practice which were being enacted within the research site, theoretical alignment could be identified. (See Table 4.7)

The approach has originated from cultural historical research and though it shares aspects of the action research method, there are also many different features. The whole practice is the focus of research, valuing the cultural historical development of the practices and the dynamic relationship between the participation in and the conditions of the practice. The intervention is based upon an identified need. The participants are transformed through participation, though a change in the practice of the participants may precede their understanding of the theory underpinning those changes and there is a focus on the conditions to be able to enact and sustain the practice. A wholistic approach is required to understand the entity under research; all aspects need to be considered along with their connections. The phenomenon is a result not of each of these aspects but of the interrelationships between them. This idea underpins why the research must take place in practice. Chaiklin (2006) states,

> Practice-developing research…[is based on] a logic for improving practice that is motivated from its own positive understanding of the theoretical and empirical relations between research and practice. This logic according to practice-developing research's own logic must ultimately be worked out in practice'. (p. 22)

The role of the researcher is to initiate and sustain a dialectic to realise the conditions of learning and to align the practice identified with theory. The raising of consciousness of the changed conditions enables continuity of the changes.

The constraints of the approach are that it is a new approach, however in this case it was selected because it suited the needs of the research site. As researcher I was also able to discuss the new approach with Seth Chaiklin, the developer of the approach. Access to a research site and adequate working conditions to enact the research are also a constraint of this approach, though this was not an obstacle for me because of the trust previously developed between me and the participants in our respective roles as assistant principal (researcher) and teachers, parents and students (participants), and because of the openness of the institution's participants to continually reflect upon their practice. Table 4.1 gives an overview of the assumptions, purpose, methods, role of researcher and constraints of the case study and practice-developing research approaches.

Table 4.1

Overview of Case Study and Practice-developing Research Methods

Methodology	Case Study	Practice-developing Research
Assumptions	Knowledge is socially constructed Participants' perspectives valued Reality is complex - interwoven variables	Historically developed cultural practice developed to meet societal needs. Dynamic interaction between participants and conditions Research directed at the whole practice – to research a particular aspect "necessary to accept the dialectical relationship between the abstract organising ideas of an educational practice and their concrete implementation" (Chaiklin, 2006, p. 21)
Purpose	Interpretation Contextualisation Understanding the instance	Development of the practice through transformation of relationships and conditions defining the practice Activity theory – identifying a need in practice Theory development – object of intervention
Method	Naturalistic setting Multiple sources of data Chain of evidence Triangulation Narrative format	Naturalistic setting Describing the whole practice, origins and underlying relationships Theoretical perspectives to formulate interventions and interpret results through which theoretical perspective is developed.
Role of the Researcher	Researcher participation continuum Empathic understanding Rigour Adaptive and flexible	Initiates and sustains a dialectic to realise conditions of learning Makes an intervention in a practice to help realise the educational aim Relates practice to theory Develops consciousness of changed conditions to enable continuity of changes
Constraints	Single research site –difficulty of generalisation Bias: Human subjectivity in selection of evidence Time and information overload	New approach – limited documentation Adequate working conditions to enact the research Access to a research site.

4.6 Data Generation Methods

4.6.1 Interviews.

Interviews are essential to gain insights into the participants' thoughts about their activity. Interviews can take a structured, semi structured or unstructured format. Structured interviews are similar to a survey with predetermined questions, asked in sequence and with the same process being repeated for each person interviewed. Semi-structured interviews explore a theme in conversation style with open-ended questions and further questioning to gain deeper meaning. Unstructured interviews are a conversation about a particular incident or concept (Burns, 1997, p.372). In this study group interviews were appropriate due to the collaborative decision making processes embedded in the organisation. A combination of both structured and unstructured interview formats were used by the researcher for interviewing the teachers and for parents when interviewing the parents. The interview process involved the development of a set of questions. However further questions following on from key points made and for clarifying answers to the set questions were also used. The children used a structured format and their lack of interview experience influenced the quality of the responses by the students to the questions.

4.6.2 Participant observations.

Participant observation is often viewed as the principal method of field research (Burgess, 1982) and involves data gathering in the natural setting under observation and also confirmation of data gained from other sources such as interviews and documents. Observations can be structured or unstructured. Structured observations follow a pre-determined set of criteria including the documenting of timing, activities and contexts, whereas unstructured observations use notes to document observations of participant

interactions and activity as they develop. (Burgess, 1982) A combination of both structured and unstructured methods was used through a prepared template that allowed for incidental notes. Participant observations can vary along a continuum in the degree of participation and observation (Gold, 1958; Glense & Peshkin, 1992). The continuum ranges from full participant, such as a teacher as researcher through participant as observer, where the researcher has a role to play within the context as well as being the researcher, or observer as participant, where the researcher has some interaction but is predominately observing for research. Finally, at the other end of the continuum there is the full observer, where the researcher has little or no interaction with the participants being observed.

4.6.3 Documents, artefacts, and research diary.

A variety of documents are used in a case study by the researcher. They can include letters, newsletters, project documentation, administrative reports, newspaper articles, presentation papers, student data, research reports and census data (Burns, 1997, p. 372). Artefacts range widely in their form including artwork, computer designed programs such as PowerPoint, video presentations, or voice recordings. Documents can specify data in more detail than can be obtained in an interview or observation of part of a process. In this research I analysed a variety of documents. School planning documents were analysed which contained information about the culture of the school and the community's views about learning. School plans were examined to reference the physical changes to the learning environment design. Minutes of team meetings, Year Prep, Year 3 and Year 5/6 were analysed to understand the process the teachers used to develop and enact educational experiences within the school. Extensive analysis of teachers' planning documents was used to examine the elements of the teachers' role. Finally, documents developed by the teachers tracked the inquiry process (termed

Documentation) and these were analysed in order to understand the co-constructed development of an inquiry approach.

4.7 Limitations of Case Study Research

Limitations of case study research identified by Burns (1998) include subjective bias, generalisation, time and information overload, reliability, validity and rigour. I will briefly examine each of these issues, using Burns' insights. Subjective bias is of concern in the selection of evidence to support or refute explanations, influenced by personal points of view. Generalisation of findings from a single case study is often questioned for its scientific relevance, and generalisations can be limited to theoretical propositions. The massive amount of information to investigate in case studies is time consuming and challenging to adequately analyse, leading to possible selectivity and bias. Observation requires practice by the researcher to enable reliability and data need to be agreed on by all concerned. Validity is challenging at multiple levels within the case study approach: construct validity through subjective judgement, internal validity through responding to a wholistic ever-changing reality, external validity through the challenges to generalisability beyond the immediate case. A rigorous case study is challenging, as the research activities are not as orderly and systematic as in many other approaches (Burns, 1998).

4.8 Study Design

This section of the chapter documents the methodology in action by describing how the methodology outlined in the first part of the chapter framed the design of the study. I detail the selected data generation methods and the theoretical reason for their selection. As the potential for bias is inherent in participatory research, the bias will be balanced by "methodological triangulation" (Denzin, 1970, Denzin & Lincoln, 2005, p.6) or "multiple

strategies" (Burgess, 1982, p.116) of data collection. I will begin with a brief overview of the whole study design.

4.8.1 Overview of the study design.

In order to answer my research questions, I set up a case study of a school undertaking educational reform. Table 4.2 provides an overview of the study, summarising the research focus, methodology, methods, participants, research site and an outline of the study sequence. The study sequence follows qualitative research methods, involving a combination of a case study methodology and Practice-developing Research methodology.

Table 4.2

Overview of the Study

Research Focus	Identify the practices of learning Identify the beliefs underpinning these practices	
Methodology	Case Study Practice-developing Research	
Methods	Semi-structured interviews with teachers were conducted by the researcher.. Semi- structured interviews with parents were conducted by trained parents. Structured interviews with children were conducted by trained children. Participant observation in classroom and other school settings Document analysis Research Diary	
Participants	Teachers n =11 Parents n =8 Children n = 16	
Research site	Three learning complexes in a Primary School P-6.	
Outline of the study	2006 Assistant Principal and staff engaged in Practice-developing research throughout the year as a natural process of life with in the institution. This included: engaging in professional learning and dialogue; documenting the new professional understandings; and documenting the implementation of these understandings within the institution's learning complexes.	2007 Analysis of the artefacts from 2006. Interviews with and by the selected participants. Observations and documentation of the organisational structures.

I gathered data predominantly through interview, observation and document analysis. These three sources of data gathering featured: (1) *Interviewing of teachers, students and parents*. This involved the use of parents and children as interviewers; (2) *Participant observation:* Observations were taken through a participant observation approach. (3) *Document Analysis:* Documents, artefacts and a research diary were analysed. The ways these research data sources were identified and documented are summarised in Table 4.3 below.

Table 4.3

Documentation of Data Sources

Method	Code (example)	Description
Interview with teacher/ child /parent	Interview/ 27.02.07/ Gemma/ Teacher Year	Interview/ date/ pseudonym/role
Document	Document/ 7.03.06 /meeting minutes	Document / Publication date / type
Observation	Observation/ 14.03.07/ Year 5/6	Observation/ date/ Year level
Memo written in Research Diary	Memo/ 14.03.07/ Year 5/6	Memo /date/ Year Level

4.9 Entry into the Case Study Site

The school was selected because of its reputation as an innovative school providing programs to meet the needs of twenty-first century learners. The focus of the school community was to continue to engage in ongoing research to improve and develop its practices. I was at the time the Assistant Principal at the school, responsible for the teaching and learning programs across the school. The interest in this site was because of my in-depth knowledge of the positive outcomes of the children, and the commitment of parents and staff to exploring new ways of developing teaching and learning at the school. The aim of the research was to analyse and document the practices and the theories which underpin the enacted practices to enable the transference of these practices and theories to other school communities.

4.9.1 Ethics procedures in action.

Following a letter to the Principal outlining the research proposal, I made an appointment to meet with the Principal of the school in April 2006 to informally discuss the possibility of conducting the research in order to analyse the theories and practices that underpinned the learning at the school. The Principal was enthusiastic and supportive about the research.

A request was made, and permission granted, to speak to school council about the research project and to answer any questions at a monthly meeting held on the second Tuesday of every month. I asked for, and was granted, permission to speak at a staff meeting about the research in general terms, and stated I would like to research the learning in two or three complexes across the school with a preference for a cross section of year levels, Year Prep, Year 3 and Year 5. I completed an application to undertake the research with the Department of Education and Training Victoria, and was granted permission in August 2006. I completed ethics approval forms for Monash University and was granted ethics approval on the 3rd of January 2007.

4.10 The Participants

Selection of the participants involved the volunteering of teams of teachers, two parents and two children to act as interviewers, and parents and children to participate in discussion groups. The method used for recruitment of participants is outlined below and further detailed in the data generation section (4.12).

4.10.1 Teachers.

Teachers were informed about the research project in a staff meeting. Teachers in Year Prep, Year 3 and Year 5 were invited to participate. The year Prep team and the Year 5/6 team expressed their interest to become involved via the school Principal. The Year 3 team asked to meet with me to further discuss the ethical elements of the research. Their concern was who would have access to the data: I assured them that in line with ethical requirements only my supervisor and myself would have access to the data. I also informed them they would have access to interview scripts for editing prior to use in analysis. Following the meeting they also expressed interest to become involved.

After the three teams of teachers had agreed to become involved in the research the selection was formalised through signing of consent forms.

The process of acceptance of the involvement of participants was as follows:

- The researcher handed to the office staff the number of copies of the teacher explanatory statement and consent forms required to distribute a copy to each Year Prep, Year 3 and Year 5&6 teachers
- The office staff distributed these to the teachers via each teacher's pigeonholes.
- Teachers were requested through a message in the daily bulletin to return consent forms to the school office if they consented to participate in the research project.
- The teachers willing to participate returned the signed consent forms to the office and placed them in the box provided.

Teachers' participation involved providing me with access to the documentation of their collaborative planning, minutes of meetings and documentation of the children's learning, allowing me to make three visits to the learning environments and participation in a group interview about the teaching and learning practices within the complexes. The teachers were used to me working in collaboration with them and felt very comfortable about the process of talking with me about their practice, sharing with me their documentation and having me present within their complexes.

The Prep team comprised three female teachers, two full time beginning teachers and a teacher with a background in the visual arts who was a support teacher working in complexes across the school supporting the development of inquiry based learning. The Year 3 team comprised a male full time teacher and two female part time teachers who job shared. The Year 5/6 team

comprised five female staff members. All of the participants had been working as primary teachers for less than 6 years.

4.10.2 Parents.

I approached two parents who were participants in the parent research group and who also had an educational background to act as interviewers of a group of parents. One was the director of an early childhood centre and the second was a lecturer at TAFE in childcare. I had already had ongoing dialogue with both of these parents about education. Both accepted the request willingly. I met with each of the parents to discuss the process and to go over the ethical requirements of the process, in particular the action required if someone became distressed during the interview.

I asked and was granted permission from the Principal to put into the school newsletter a request for parents to be involved in a discussion group about the learning of the children at the school. Eight parents responded and agreed to participate.

The process for the selection of parent involvement in the discussion groups involved:

1. Determining from the school manager how many families there were in the school.
2. Handing to the office staff the number of copies of the parent explanatory statement and consent forms required to distribute a copy to each family.
3. Request that the office staff distribute these to families as per normal distribution of school newsletters. (School newsletters letters are distributed to the eldest member of the family on every second Thursday.)
4. Parents were requested to return signed consent forms to the school office if they consented to participate in the research project.

5. Forms placed in the box provided.

4.10.3 Children.

I asked one of the Year 5/6 teachers to select two children to interview other children about their learning at the school. A boy and a girl were selected and the teachers approached the parents for permission for their child's participation as interviewers and also approached the children for their written consent. I met with each of the children acting as interviewers to discuss the process and to go over the ethical requirements of the process, again emphasising in particular if someone became distressed during the interview what action was required.

I asked each of the teams of teachers to select five children representing a cross-section of the learning community based on gender, ethnicity, ability and learning styles, time spent enrolled at the school; these children needed to be willing to express their ideas in an interview conducted by fellow students. The teachers approached the parents to request permission for the involvement of the children, in order that parents would not feel any pressure of my approaching them directly. Both parent/carer and child had to consent to participate in the study.

Classroom teachers at the case study school in Years Prep, 3 and 5&6 were requested to select a cross-section of five children in their class, taking into account the following criteria:

- Teachers were requested to select children with a cross section of academic achievement as measured against peers in the mid year criteria assessment against Victorian Essential Learning Standards.
- Teachers were requested to select children with a cross section of learning styles

(including bodily-kinaesthetic, visual, auditory and technological learners) as reflected in student portfolios through student choice in participation of activities to explore concepts each day in class.

- Teachers were requested to select children with a balance of gender.
- Teachers were requested to involve a cross section of children with various cultural backgrounds i.e. Anglo –Saxon, Asian, European, Pacific Islander, Aboriginal.
- Teachers were asked to involve both students whose whole formal education had been at the school as well as students who had attended other schools as well as the case study school.

The process used for this selection involved

1. Teacher selection of a cross section of children in their class.
2. The researcher handed to the classroom teachers the number of copies of the, parent of child explanatory statement and consent forms required to distribute a copy to each of the selected children's parents/guardian.
3. The classroom teacher distributed these to the parent through the child's communication diary.
4. Parents agreeing to their child's participation returned signed consent forms to their child's teacher.
5. The teacher sent the returned consent forms to the office in the daily administration bag, which was then placed in the box provided by the administration staff.
6. The research project was discussed with the selected children.

The discussion took place with the children during Learning Agreement, a time when the children select their involvement in various activities. During this time targeted sessions take

place with small groups withdrawn to focus on specific tasks. This is a regular routine for the learning complex. The children in the complex are regularly engaged in a variety of different projects. During the discussion the children were given the option to decline participation. The class teacher sent the child consent form home with the child, enabling discussion with their parents. The child completed and returned the consent form to their teacher if they wished to participate.

Permission forms for all participants were distributed and collected through the office manager of the school; I did not approach or communicate with any participant directly unless requested to answer questions, excluding the two parents acting as interviewers, so as to minimise the possibility of coercion.

Table 4.4 outlines the details of the research participants involved in the research including their role, pseudonym name and gender and years of experience at the school. Table 4.5 provides the number of parents and children involved in the research discussions.

Table 4.4

Details of Participants/ Co-researchers

Participant Role	Pseudonym/gender	Years at School
Teacher Year Prep	Teresa /Female	7 years from 1999
Teacher Year Prep	Olivia /Female	3 years from 2004
Teacher Year Prep	Debbie /Female	3 years from 2004
Teacher Year 3	Sam /Male	6 years from 2000
Teacher Year 3	Gemma /Female	7 years from 1999
Teacher Year 3	Anna /Female	5 years from 2001
Teacher Year 5/6	Kim /Female	6 years from 2000
Teacher Year 5/6	Rachel /Female	7 years from 1999
Teacher Year 5/6	Michelle /Female	6 years from 2000
Teacher Year 5/6	Nicola /Female	6 years from 2000
Teacher Year 5/6	Bronte /Female	1 years from 2006
Parent Interviewer	Bianca /Female	2 years
Parent Interviewer	Madeline /Female	2 years
Student Year 5 interviewer	David /Male	5 years
Student Year 5 interviewer	Leila /Female	5 years

Table 4.5

Parent and Child Participants

Parents	8
Children	16

4.11 A Community of Researchers

I wanted to research and examine, the responses of children having conversations with other children and parents with parents. In this situation the community of practice could be

examined though the dialogue between the participants. To support this practice child and parent researchers were trained.

4.11.1 Training of child researchers.

A group of trained year 5 students conducted interviews with students. All students at the school regularly take part in discussion circles, with the emphasis on student leadership of the discussions, thus the participants were comfortable with the process. The Year 5 & 6 students were seen as leaders in the school and are respected for the positions they hold. Senior students at the school have had previous involvement in Education Department and University research projects as researchers.

The team of Year 5 & 6 teachers selected two student interviewers, using the criteria of being good peer mentors, responsible, trustworthy, and efficient time managers. A 45 minute training session involved interview techniques: providing a supportive environment, not directing the conversation, dealing with distress, not making reflective comments which may lead or influence the participants. The children were put through role-play scenarios to reflect upon the management of the interviews. The training took place in a discussion area within the classroom and was conducted by me. The issue of confidentiality was emphasised with the student interviewers. At the end of the training session I assessed the suitability of the child interviewers: both were deemed suitable. A debriefing session at the end of the interviews provided an opportunity for the interviewers to discuss any issues they had, including the issue of confidentiality. The classroom teachers were asked to talk to the children who had been interviewed and determine any concerns about confidentiality. The students were informed that this would happen during training. The students had had previous experience in such situations in classroom research projects. The interviews were recorded. They took place in a

quiet space within their learning complexes. The classroom teachers and the researcher monitored the interviews visually from a distance, allowing for confidentiality of what was said. The student interviewers were able to seek assistance from the classroom teacher at any time, including when any signs of distress were conveyed by the participant, though this was not required. Before the commencement of the interview students were reminded that they could end their participation at any time.

4.11.2 Parent research group.

A group of trained parents conducted interviews with parents. The parents were selected from the school Parent Research group. I discussed the project with the group and invited participation. The group was used to dealing with the issue of confidentiality with matters relating to parents. The parent interviews took the form of conversations with focus questions. Training of the parent interviewers emphasised providing a supportive environment, time management and dealing with conflict. The interviews were recorded.

Provision was made to address the case of any distress arising on the part of the student or parent interviewers, or the student or parent participants. The child's home group teacher or I would be the first point of contact to provide counselling (I had been the school welfare officer for 5 years). Further assistance or advice could be provided by the school's full time Welfare Teacher. If the need was determined, the school's psychologist was on call to deal with any situations or to provide advice. No issues arose during the interview process.

4.12 Data Gathering

As the principal researcher I completed observations, collected artefacts and conducted interviews with teachers. Table 4.6 provides a summary of the data generation methods, detailing the procedures enacted and the rationale for these procedures.

Table 4.6
Overview of the Data Generation Methods

Method	Details of procedure	Rationale
Interviews	Formal semi structured interviews with the teaching teams (4)	To gain an understanding of the beliefs which underpin the practices outlined in the planning documents
	Formal semi structured interviews conducted by parents with parents (2)	To gain an understanding of the parents' knowledge of the processes enacted in the school
	Formal structured interviews by students with students. (3)	To gain an understanding of the viewpoint of the children about their learning.
Documents	School planning documents	To reference information about the culture of the school and related views about learning
	School plans	To reference the physical changes to the learning environment design
	Minutes of team meetings	To understand the process the teachers used to develop and enact educational experiences within the school
	Documents tracking the inquiry process (Documentation)	To understand the co-constructed development of an inquiry research
	Teachers' planning documents	To understand the elements of the teachers role
	Personal diary for the year of the case study	To verify the enactment of the documents through my role of Assistant Principal and Teaching and Learning leader within the school.
Observations	Observations were made of the teachers working collaboratively in learning complexes.	To verify the practices outlined in the planning and documentation of the inquiry approach documents

4.12.1 Interview context and process.

The semi structured interviews with the Prep and Year 5/6 teachers took place at an agreed time in the school meeting room. The teachers were interviewed together as a team. The

meeting room had a large table and comfortable chairs. A convenient time for the whole of the Year 3 teaching team could not be arranged as one of the teachers worked part time. Two of the teachers were interviewed together in the meeting room at the school and the third teacher was interviewed in her office space at the university where she was studying. A semi-structured interview comprising a series of questions was the format used. The teachers collaboratively answered the questions. The teachers were given the questions prior to the interview. (See Appendix 1: Interview Questions) The interviews were audio recorded.

The year five and six teacher interview took place after school. Each spoke freely and the teachers bounced ideas off each other, supporting each other's comments. Comments made by teachers were often acknowledged by other staff members and built upon until the team felt the question had been answered completely to best represent the collaborative process of the team. Four of the team members contributed to most questions, while the fifth teacher, a graduate, listened, acknowledging the responses of the other participants through gestures, contributing occasionally. The five teachers were confident with the interview process.

The Year Prep interview took place on a Saturday morning on the request of the teachers. The two full time Prep teachers had met for breakfast prior to the interview to prepare for the interview, This reflected that the two full time teachers were a little nervous, the third part time teacher was comfortable and at ease. The teachers collaboratively responded to the questions answering each question in detail. The part time teacher at the end commented, *"We didn't really develop anything"*. This comment reflected the fact the conversation had focused on documenting and reflecting on the current practice of the team and not the practice-developing research approach, which was the normal focus when we came together to meet, and which helped develop new team understandings that in turn led to new practices.

The interview with one of the part time teachers in the Year 3 teaching team took place in an office at the university. The teacher was excited and happy to meet. We began the meeting by discussing her current role at the university as a research assistant and her study. We then began the interview. Her answers to the questions were detailed. At the conclusion of the interview I thanked her for her participation; her body language and expressions reflected she was confident with her responses and happy with her contributions to the research. The interview with the two other members of the Year 3 team took place after school in the school meeting space. The tone of the meeting was quite serious. The teachers bounced off each other's comments, collaboratively responding to the questions. The teachers answered the questions in detail and responses were aligned to the comments made by the third member of the teaching team.

Verbatim transcripts of the interviews were recorded and copies returned to the teachers for verification and comment.

The parent interviews took place in the evening in the school da Vinci centre. These took place on two evenings. Each interviewer led one of the interviews, with the second interviewer present for support. The venue had large comfortable tub chairs in a circular arrangement. I met and greeted the participants and thanked them for their participation. I then left the interviewers to lead the discussions. The transcripts of the tapes revealed that the parents made the participants feel comfortable and added to the core questions to ensure understanding of the context of the questions. The following excerpt demonstrates this process.

> I (Interviewer one): Okay anymore on that or shall we move on. Okay now we've talked a lot about relationships with teachers the people side, now the next couple of questions, switch our thinking onto the methods of learning. So as parents, what have you seen, I think it makes, it stimulates the thinking; what are some of the methods of

learning, classroom techniques you might be familiar with that are used in the classes here.

I (Interviewer two): So then when we talk about learning methods, just some of the examples that Esme's placed here, mentors, target teaching, workshops, projects, the excursion, do they sound familiar?

P: Target Teaching

I: Okay so what you're talking about, is one of the styles of teaching, which is the target teaching, (P: mm) (P: yeah)

P: And so they've taken her aside because there's an aspect of something that she can't, quite grasp (P: they need extra help really) (P: extra help) and she needed to be taught that specifically, (P: mm, mm) (P: yeah)

I: and so have any of the others heard of the target teaching they do. It might not happen in the lower grades as much does it?

P: Well that's more the small group work. (P: yeah)

P: Small group.

P: When they, I think when they do reading and things like that they'll do that in a small group and the, the group, reads the same book and, does work on that book so I think that's targeted as, (P: yes) you know whether (P: yeah) it's an interest or learning a particular skill (Ps: mm) Parent 11

The interviews both went for 1 hour and 14 minutes. Both groups of parents at the end of the interview expressed how much they enjoyed the process of discussion of the key features of the learning at the school. Verbatim transcripts of the interviews were recorded and copies returned to the parents for verification and comment.

The interviews with the children took place in class time during learning agreement time, a time in which the children have a choice about what they will become involved in.

The two children conducted the interviews with the children and audio recorded the interviews. The interviews were short: the Year Prep interview went for twelve minutes and the Year 5/6 interviews went for fourteen minutes. A convenient time for the Year 3 interview to take place could not be arranged due to children being on extended holidays or absent at the set times. The interviews with the children did not provide detailed responses.

4.12.2 Artefacts.

The artefacts provided a valuable source of data for the research project. The artefacts comprised teachers' extensive documentation of their planning and minutes of team meetings. These artefacts included collaborative goal setting, documentation of the children's learning and participation (in particular transcriptions of student comments), artefacts of children's learning including drawings and written pieces and teacher reflections on the experiences being provided and their alignment to the set goals. The teachers kept full documentation of their inquiry research project with the goal of making the learning visible throughout the process of the project. This process had three purposes: for the children to revisit their learning, for the teachers to use the analysis to inform future planning, and for parents to be provided with insights about the learning. Artefacts also comprised school documents that had been developed collaboratively by teaching staff.

4.12.3 Observations.

The combined process of structured and unstructured observations of the learning complexes took place in February 2007. The teachers involved in the complex observations were all

participants in the research, however some of the teachers had changed teaching team complexes with the start of a new school year. The focus of the observations was to document classroom organisation. I observed the year 5/6 complex on three occasions as a participant observer during learning agreement and workshop time. On each occasion a teacher was taking a workshop in the workshop room with 25 students, one teacher was taking a targeted teaching episode with a small group of students on a specific skill, one teacher was conferencing with children discussing the child's learning journey document, one teacher was working with a group of students and another teacher was monitoring the children through the various learning spaces. The children were focused on the variety of tasks they were engaged in, while the teachers were focused on achieving the outcomes they had set themselves for the specific time frame aligned to the roles in which they were engaged.

Observations of the Year 3 and Year Prep cohorts took place during learning agreement time and workshop time. These activities are separated in the junior and middle levels of the school.

The Year Prep cohort, during the workshop, was interacting with a guest speaker. The children were focused and asked questions throughout the presentation. During learning agreement time the children worked on the nominated tasks selected on their individual learning journey document. The teachers both interacted with the children moving from group to group where the 'provocations' had been set up, questioning the children about their learning, the third teacher worked explicitly with a group of children working on a focused painting activity. All the children were working collaboratively with other children.

The Year Three groups during the workshop time were in separate rooms with a teacher; the groups were involved in collaborative work responding to a question. During learning

agreement time the children were working throughout the complex on tasks from their individual learning journey document. The teachers interacted with the students, moving from group to group. Some children were working collaboratively together; other children were working individually on similar tasks alongside each other discussing what they were doing individually.

The short visits to the learning complexes gave a clear indication that the teachers were very focused on their role, each interacting in an ongoing process with the children. The children were all active in their activities. To understand the complexity of what was happening required the piecing together of the beliefs that underpinned the practices through interviews with participants and reviewing the artefacts of teacher planning and documentation of the children's learning.

4.13 Data Analysis

This section describes the methods used to analyse the data collected. It begins with a table of the data collected and analysed. Procedures used for sorting, coding, analysing and presenting the data are then outlined. My use of coding and categorising and coding and writing as tools to support the analysis is described. The sociocultural analysis of the data using Rogoff's (2003) personal, interpersonal and institutional lenses is defined. I then explain the reasoning behind the presentation of the data in the following chapters. A table is presented summarising the practices identified and the identified theorises associated with these practices. The section concludes with a response to validity and reliability criteria.

A summary of the quantity of data collected and analysed, is presented in Table 4.7.

Table 4.7

Summary of Data Collected and Analysed

	Participant Observations 2006	Document Analysis	Semi Formal Interviews	Formal Observations 2007
Prep	4 hrs. per week/ 160 hr.	80	Prep teachers: 24 m	2x 2hr
Year 3	3 hrs. per week/ 120 hr.	75	Year 3 teacher: 33 m Year 3 teachers (2): 38 m	2x 2hr
Year 5/6	6 hrs. per week/ 240 hr.	80	Year 5/6 teachers: 28 m	2x 2hr
Parents			Interview Group 1: 1hr 13 m Interview Group 2: 1hr 15 m	
Children			Prep Group: 12 m 5/6 Group 1: 8 m 5/6 Group 2: 10 m	
School		15		

The data analysis process was challenging due to the immense amount of material to analyse. However the real challenge lay in the complexity and the uncertainty of the analysis process. Analysis of the data led to further literature reviews and interactions with leading researchers in the area of cultural historical theory, interjected with further data analysis periods.

4.13.1 Coding and categorising.

Once all the observations, documents and interview transcripts had been collected, coding was used to identify themes, concepts and categories. The categories were informed by the purpose of the study. The analysis involved "looking for regularities and contrasts" (Burns, 1998) to the predicted pattern, from which new theories could be developed.

4.13.2 Coding and writing.

I began the daunting task of analysis of the data by reading the artefact documents and the interview transcripts. I noted features of the information, out of which patterns of key ideas developed. I completed a course on the use of Endnote, however, I found development of my own coding system of manually commenting on the data and sorting the data to be the most effective. Initial themes were identified, often involving teachers' everyday terminology of approaches such as interactions, teaching and learning methods and communication. By sorting the data in this way, and repeatedly browsing the coded text, I began to discern practice patterns and themes. These key practices were then analysed further to identify the everyday concepts associated with these themes; these concepts were in turn analysed to identify the theoretical concepts that underpinned the practices. Writing early drafts highlighted the need for deeper analysis and illuminated new concepts to follow in the analysis. A reflection journal documented this process of deeper and deeper analysis of the data. Further reading and professional dialogue guided by my supervisor led to new knowledge and understandings, which in turn influenced the analysis of the data. The analysis was challenging, however engaging and enlightening, as it led to the development of interpretations leading to new understandings.

4.13.3 Socio-cultural analysis.

Rogoff's (2003) writing about socio-cultural analysis of human activity is documented in the literature review in the second chapter. Her process of analysis of the socio-cultural "transformation through participation perspective" involves the personal, interpersonal and cultural perspectives to be "conceived as different analytical views of ongoing, mutually constituting processes" (p. 52). Rogoff's (2003) outline of the three lenses of analysis:

personal (individual participation), interpersonal (collaboration) and institutional (community, context) were used to analyse the three collaboratively transpiring processes within the research site. Each lens focused on a particular aspect ensuring awareness of the other influencing aspects was kept visible in the background. Using the interpersonal lens, the focus was the relationship between the participants, their roles within the interaction and what shared understandings and possibilities were developed together. Using the institutional lens, the focus was on the context, with analysis of the cultural history of the activities and the setting, in which the human activity occurred. The historical and cultural context changes over time as a result of people's participation. Using the personal lens, the individual was foregrounded, with the focus on information about the individual as a participant and the individual's efforts to learn through observation and participation. These personal aspects cannot be interpreted outside the context of the interpersonal or cultural aspects. The combination of the personal, interpersonal and cultural aspects constitute the activity. No aspect exists in isolation. The focus is on the child's transformation of their participation through the development of motives for engagement with the experiences, leading to the development of further intra-psychological functions.

This process was used to examine the interplay of the participants in cultural activities, using cultural tools, with the intended goal of development of the individual participants and the development of the culture of the collaborative processes.

In reporting the findings, direct quotations were taken from the interviews and from the artefact documents of the teachers, both data sources providing the direct voices of the participants in the research study. The data sources are outlined in Table 5.1. The pseudonyms used for the teachers, children and parents are documented in Table 5.2. Evidence of the

teaching and learning practices the community engages with are outlined in the next three chapters through the interpersonal, institutional and personal lenses. I begin with the Year Three learning community through an interpersonal lens as it was noted that collaboration underpins all practices within the institution. The next chapter examines the practices in the Year 3 learning community through an institutional lens, which is then linked with the personal lens analysis, as it was noted that the outcomes of the children are enabled as a result of the institutional practices. I began with the data analysis from the Year 3 complex, due to the quantity of the data, and the ability of the data to explicitly document the practices of learning within the school. The following chapter compares the Prep learning community with the Year 5/6 learning community, to examine the interpersonal and institutional elements, and the impact on these through a personal lens on the children's motives for engagement and development.

The use of Rogoff's lens of analysis (2003) was enacted by reading and analysing the data through each of the lenses – interpersonal, institutional and personal – leading to the identification of the key ideas through coding the findings. This approach facilitated the analysis of the data through one lens, for example, a child's personal motives for learning, while temporarily backgrounding the interpersonal aspects and the institutional aspects of motivation. Table 4.8 outlines the use of Rogoff's personal, interpersonal and institutional lens providing a conceptual structure to examine and present the data analysis.

Table 4.8

Conceptual Structure for Data Analysis

Research Question Data Analysis – Key Findings What are the pedagogical practices in play in a contextual, participative, community model of pedagogical reform, enacted in a government primary school?	Everyday Concepts (practices) for Analysis What are the beliefs, which underpin a contextual, participative, community model of pedagogical reform, enacted in a government primary school?	Scientific Concepts (Theories) for Analysis
Interpersonal lens		
Interactions between teacher and children	Reciprocal relationships Relationships based on trust and respect	Subject positioning Pereizhivanie - unity of affect and intellect Conceptual and contextual intersubjectivity Co-construction of learning
Teacher to teacher interactions	Collaborative planning and implementation	Mediating role
Children to children interactions	Collaborative learning Conversations	Subject of own learning activity
Teacher, parent, child interactions	Communication Partnership	Community transformation through participation Dialectic relationships Social situation of development Community of learners
Research projects	Collaborative inquiry	Theoretical knowledge Double move between everyday and scientific knowledge Dialectic community of inquiry
Recording of learning	Learning Journey Document	Documentation of learning Making Learning visible
Institutional Lens		
Non traditional roles	Participation structures	Enabling co-creation of the curriculum – roles Positioning

Communication	Communication processes	Enabling co-creation of the curriculum –communication
Teaching and Learning methods	Sources of learning	Enabling co-creation of the curriculum – sources of learning Imitation Experience
Personal Lens		
Child's participation	Motivation Relevance to lives Purposeful	Obshchenie Cultural – historical child development Motives Zones of Development Leading activity Personality / Identity Inter psychological and intra psychological functioning – subjective sense

The research questions guided the presentation of the data, where the analysis initially focused on the practices of the community of learners followed by a re-analysis in relation to the theoretical concepts outlined in Chapter Two. The central concepts related to the theorisation of development were: the social situation of development, zones of development, intra- and inter-psychological functioning and transformation through participation. The central concepts related to the relationship between learning and development were: leading activities, obshchenie, imitation, subject positioning, everyday and scientific concepts, theoretical narrative and empirical knowledge, conceptual and contextual subjectivity. Motives, subjective sense and pereizhivanie, were concepts related to the purposes of participation leading to development. The concepts of *dialectical relationships* involving *varying subject positioning* of the participants and *dialectical communities of inquiry* involving *co-creation of*

the curriculum, were newly identified concepts. Each of these concepts is shown in Column 3 in Table 4.8.

4.13.4 Validity and reliability.

Rogoff's lenses of analysis (2003), reminds us that it is the observer holding the lens, thus the focus and choice of what is to be analysed lies finally with the researcher. The researcher primarily has the responsibility of selecting the research topic, observational techniques, interview selection and procedure, document and artefact selection and making the appropriate interpretations in analysis. With these points in mind, validity of data needs to be achieved. Three types of validity are in play: construct validity, which asks whether the research methods measure what they claim to measure; internal validity, which asks whether the researcher observes what they think they are observing; external validity, which is achieved if the "insights it contains can be generalised beyond the situation(s) studied" (Burns 1998, p. 354). What is required is "a process of research self monitoring, termed disciplined subjectivity, that exposes all phases of the research activity to continual questioning and re-evaluation" (Burns 1998, p. 324).

The focus of reliability in qualitative data collection is based on whether the data is dependable rather than replicable. A means of establishing reliability is through triangulation, documenting the involvement and aims of the researcher clearly and detailed documentation of how the data was collected, verified and analysed (Burns, 1997). In this study the data is verified by the participants through the return of the copies of scripts to the informant for review and also through the ongoing discussions of early analysis with the participants as part of the practice-developing research process.

Triangulation, a traditional means of developing reliability of data in qualitative research using three different points of view, is achieved and was originally planned for through obtaining the viewpoints of teachers, children and parents. This reliability, however, developed beyond just these three perspectives, when I reflected on the work of Richardson (2000). Richardson moves beyond the concept of triangulation to a theory of crystal: "… crystals, grow, change alter… . Crystals are prisms that reflect externalities and refract within themselves, creating different colours, patterns, and arrays and casting off in different directions" (p. 934). Researcher participation has been viewed traditionally with concerns of the researcher bias. However, when the research is viewed through practice-developing research, the holism of the research and the active collaboration and participation of all players – in this case, students, parents, teachers and mentors – and within which the researcher is both a teacher and parent, I believe the reliability is enhanced, creating a 'crystal' of reliability.

The role of researcher from a university is a position that can create hierarchical relationships between the participants and the interviewer. This role was also complicated by my role of Assistant Principal within the school. For this reason I wanted to research and explore the responses of children having conversations with other children and parents with a parent facilitator so that this hierarchy of position would not impact on responsiveness. In this situation the community of practice can be examined through the dialogue between the participants. This approach of using parents and children as researchers supports this goal. The teachers being interviewed as collaborative teams was also planned to achieve the same goal.

4.14 Ethical Considerations

The researcher is the Assistant Principal at the school and has been a leading participant in the change since 1997. This was the third formal research project the student researcher conducted

within the school. Accessing data for research from a teacher's professional practice within a community of learners is intrusive and has the potential to cause distress. The ethical consideration of the research requires addressing this risk through the use of appropriate processes. This section outlines the processes used to gain informed consent and to ensure as much privacy, anonymity and confidentiality as possible in communal projects.

4.14.1 Informed Consent.

Informed consent is a fundamental ethical principle in research, as it enables choice of participation by the individual. Participants need to understand the purpose of the study, the processes to be used, what their involvement will entail and the ethical procedures designed to minimise harm. Once informed, the participant must be free to volunteer without fear of duress, pressure or manipulation. My role as participant in the research site had a high risk of being perceived as exercising coercion of participants. However, this school works on a distributive model of leadership, empowering teachers to be decision makers and leaders; they are well-versed in making independent decisions about participation. I requested that the Principal make explicit when introducing the project that participation was voluntary and that he was very aware about the concern of coercion in recruitment. The school's parent research group supported the process of deciding who to invite to be the two parent researchers. The teachers are committed to upholding the rights of children and made sure that they were participating willingly. This process is aligned to the negotiation of the child's learning, which is central in the practice of the school. All potential participants were provided with information leaflets about the research specifically designed for each group: teachers, parents and children (Appendix 2 Explanatory Statements and Consent Forms).

The privilege to conduct research within a community's learning environment requires respect of the rights of the participants to act on their volition to not participate without being questioned about the decision. Participants were thus made aware of their rights not to participate and to withdraw at any time without giving reasons. The right to withdraw, or to decline to participate in any part of the research was made explicit first on the information sheet and repeated throughout the research process. Not all staff, parents or children were involved.

The potential for bias inherent in participatory research is balanced by triangulation of data collection. Perceptions of conflict of interest among participants due to my roles as Assistant Principal and researcher were managed through ongoing discussion and explanation that this project sat outside of my role as the assistant principal and that the result of any conflict or coercion between the two roles would result in the termination of my research. My role as researcher was to accurately document the current practice and to align these practices with current theories on teaching and learning. The school has a strong philosophy of reflection on practice to inform future planning. Triangulation was used in the investigation to support validity of data collection and analysis.

4.14.2 Privacy, anonymity and confidentiality.

Privacy, anonymity and confidentiality are three further areas requiring consideration within the research.

Privacy relates to a person keeping control over what actions and perspectives they choose to share. Anonymity acts to separate the identity of an individual from the data collected by issuing pseudonyms to keep the identity of the individual unknown. Confidentiality is an

assurance of the manner in which the information given will be used, aligned to the explicit aims of the research.

There are difficulties in guaranteeing privacy in research within a community of learners, where data are generated through the responses of children having conversations with other children, parent with parents and teachers in collaborative interviews. In this situation the community of practice is being examined through the dialogue between the participants. All participants needed to be continually aware of their rights and those of other participants to be able to voice their thoughts and opinions with confidence that no one would share that information beyond the interview situation. The culture of respect and collaboration within the institution supported this process.

Assurances of anonymity were also difficult within this research site as my dual role as researcher and assistant principal could have enabled disclosure of the school site. Also within the school site the other teachers knew the identity of the participants. Anonymity can also become problematic when other co-researchers are interested in being identified. An important matter at issue here was the risk of losing ownership of the work of the community being a greater ethical problem than the risk of disclosure or recognition of identity. In the same vein, confidentiality is also problematic. The focus of the researcher requires the close alignment of the research to the set aims presented to the participants in the research statements. This point is discussed further in the next chapter 'Methodology in Action'.

4.15 Chapter Summary

This chapter has explored the socio-cultural approach to the methodology used in the research study. The hypotheses and the research questions for the study – made explicit in this chapter

– were based on the cultural-historical theory underpinning the research. The ontology, epistemology and methodology perspectives of the study were discussed. The study's interpretive research paradigm (Denzin & Lincoln, 2000) was described as based on a relativist ontology, a socio-cultural epistemology and a participative and collaborative methodology involving full participation by the researcher in the activities of the researched community. Qualitative research methods were defined so that the research was situated in the context of the activity. This helped to develop representations of that world and to interpret the findings in terms of the actions enacted by the participants, through a perspective based on cultural-historical theory. The qualitative research methods of a case study and practice-developing research were outlined. The strengths and limitations of qualitative research were stated.

The data generation methods were discussed including interviews, participant observations and the analysis of documents, artefacts, and the researcher's diary. The limitations of a case study approach were identified. The study design was defined, the entry into the research site was described noting the ethical procedures in action, the participants were described, the use of parents and children as co researchers was explained, and the data gathering methods were outlined.

The data analysis process involved coding to identify themes, concepts and categories. The use of Rogoff's (2003) socio-cultural analysis of human activity was discussed with its three foci of analysis, the personal (individual participation), interpersonal (collaboration) and institutional (community, context). A discussion on validity and reliability highlighted the awareness that it is researcher holding the lens and that validity is monitored through construct, internal and external validity processes. Reliability of data is managed through

triangulation (Burns, 1998) and through the theory of crystal (Richardson, 2000). The ethical considerations in regards to the research of teachers' professional practice and the role of the researcher as participant in the research site were discussed in regards to informed consent, privacy anonymity and confidentiality of the participants.

In the following chapter, valuing the concepts embedded in cultural-historical theory, I investigate the context of the case study school by examining the history of the development of the practices within the institution and also the cultural elements of the school. This analysis firstly considers the elements impacting on the school from society and government and includes the historical perspective on the development of education, federal and state government educational priorities, the development of the school curriculum 'The Victorian Essential Learning Standards' (VELS), Principles of Learning and Teaching (PoLT) and the Victorian schools funding and employment model. Secondly I detail a socio-cultural description of the school noting the elements of the local community and including a description of the participants within the school. Thirdly I examine the history of the actions taken by the school to transform its practices, including the development of pedagogy, physical environment design, professional development and parental involvement.

Chapter 5
A Cultural-Historical Perspective of the Case Study School

> Every function in the child's cultural development appears twice: first, on the social level, and later, on the individual level: first between people (interpsychological) and then inside the child (intrapsychological). This applies equally to voluntary attention, to logical memory, and to the formation of concepts. All higher functions originate as actual relationships between individuals. (Vygotsky, 1978, p. 57)

5.1 Overview of Chapter

In order, to provide a context for the case study with due consideration of the tenets of cultural-historical theory, I will outline the historical conditions and the cultural background of the participants in the study. This chapter begins with a brief historical perspective of the development of education internationally since the nineteenth century. Following on from this, the developments of Australian Federal Education policy and the Victorian State policies are discussed, reflecting upon the research that has underpinned this policy development. Victoria's policies are a focus as the case study school is located in this state. I then explore the socio-cultural context of the local community and the participants in the case study. A history of the actions of the school from 1971 to 2006 is then outlined. I conclude the chapter by locating the case study school within the context of the broader pedagogical and environmental constructs informing schools in Australia. To do this effectively, I draw upon data from the research in order to give voice to the participants of this school and to discuss the specific conditions of the case study school that are examined in more detail in the forthcoming data presentation chapters (Chapters 6–8).

5.2 A Historical Perspective on Education

In the western world, education systems have similar histories, with the organisational structures, and pedagogical processes having remained constant for over a hundred years. (Papert, 1994)

Dudek (2000) states that England, the first country to experience industrialization, sought from the beginning of the nineteenth century to provide education for the poor so-called industrial classes. Educators such as Johan Pestalozzi in Switzerland, Samuel Wilderspun in England and Friedrich Froebel in Germany were concerned for the spiritual well- being and the physical conditions in the cities where young children lived and where many were forced to work in the factories. Dudek's historical account shows that the 1833 Factory Act in England enforced two hours instruction daily for children working in factories. In 1872 an Education Act in Scotland legislated that a school board was to be established in each district to build schools and provide a satisfactory standard of education for all children aged 5 to 13 years. In 1874 Robson travelled to the USA, Switzerland and Germany to view schools. Following his return he introduced the Prussian system of separate classrooms organized around a communal hall. The classroom size was determined by the distance the teacher's voice could carry and the desks distributed to allow for the teacher to circulate the space and for the child to move from their desk during lessons. A large space at the front was made available for presentation, display and general circulation. (Dudek, 2000) The same model of school design and organisation is still predominating today, with single classrooms and one teacher with a large group of children, children predominately working at tables and a space at the front of the classroom for teacher instruction and student sharing.

According to Banks, prior to 1904 in England two types of secondary education curricula dominated: the classical academic disciplines and linguistic curriculum favoured by the grammar schools and a technical, scientific curriculum. The 1904 Act mandated the grammar school curriculum based on academic disciplines (Banks 1954). A review of the curriculum in 1988 showed little difference to the 1904 curriculum, with the only major difference being that Latin was excluded from the modern languages list (Aldrich 1988). As will be outlined in the following section this curriculum design based on subjects still dominates Australian classrooms today.

5.3 Government Priorities

5.3.1 Federal Government education priorities.

The federal government set certain mandated policies for each state or territory to implement. In Australia schooling starts with a preparatory year followed by twelve years of primary and secondary schooling. In Year Twelve a "Certificate of Education" can be studied to gain entrance into Australian university and vocational and technical education institutions. The school year is divided into four terms, each approximately ten weeks in length, beginning late January and ending late December. Students attend school from Monday to Friday generally from 9:00 am until 3:30pm each day.

Australia has a national curriculum framework, divided into eight Key Learning areas (KLA): English, Mathematics, Studies of Society and the Environment, Science, Arts, Languages Other Than English, Technology and Personal Development, Health and Physical Education. At secondary level, choice and diversity are increased, as schools are able to offer a wider range of subjects. (Australian Government: Department of Education, Science and Training, 2005a)

In 1999 the State, Territory and Australian Government Ministers of Education met as the 10th Ministerial Council on Education, Employment, Training and Youth Affairs, (MCEETYA). A declaration on National Goals for Schooling in the Twenty-first Century was established based on a framework of national collaboration. The declaration (Australian Government: Department of Education, Science and Training (DEST), 2005b, p.1) opens with, "Australia's future depends upon each citizen having the necessary knowledge, understanding, skills and values for a productive and rewarding life in an educated, just and open society. High quality schooling is central to achieving this vision". The document outlines common and agreed national goals. These goals provide a balance between personal development, curriculum, knowledge and skill acquisition and social development. The personal development goals are very detailed and cover a diverse range of characteristics and skills including: personal excellence, high self-esteem, effective communication of ideas, problem solving, employment skills, collaborativeness, ethical considerations, being active and informed citizens, contribution to ecological and sustainable development, and the ability to maintain a healthy life style. Knowledge and skill acquisition focus on the key learning areas, literacy and numeracy, vocational learning and enterprise skills. Social development ensures non discrimination, equitable access to education for all, valuing of indigenous culture, contribution to and benefit from reconciliation, valuing of cultural and linguistic diversity, and access to high quality education to enable the completion of Year 12 or its vocational equivalence and clear pathways to employment or further education. It provides a balanced perspective to the goals of education.

It is outlined in the declaration (Australian Government: (DEST), 2005b) that the achievement of the goals entails several criteria: a commitment to collaboration for the purposes of: further strengthening schools as learning communities where teachers, students and their families

work in partnership with business, industry and the wider community; enhancing the status and quality of the teaching profession; continuing to develop curriculum and related systems of assessment, accreditation and credentialing that promote quality and are nationally recognised and valued; increasing public confidence in school education through explicit and defensible standards that guide improvement in students' levels of educational achievement and through which the effectiveness, efficiency and equity of schooling can be measured and evaluated. The first points raise key issues in regards to the development of schools as learning communities and the place of schools and the perspective of schools in the wider community. The final two points however signal that it is an underlying belief that "public confidence in school education" can be raised through explicit standards in curriculum implementation and assessment of these standards. This raises the concern as to whether the curriculum is purposeful and contextual within the child's life and whether what is being assessed is authentic learning or simply a regurgitation of skills and knowledge with little meaning within the child's life.

The Australian government's agenda for schools (Australian Government: Department of Education, Science and Training, 2005b) includes the following key priorities: establishing greater consistency in schools through statements of learning in key subject areas, national testing, an Australian Certificate of Education for Year 12 and a common school starting age by 2010; allocating higher funding for school infrastructure; improving literacy and numeracy outcomes through tutorial vouchers for failing students, a national inquiry into the teaching of literacy, and more funding for disadvantaged students; improving information to parents through new report card formats and making more school performance information publicly available; improving teacher education through development of the Australian Institute for Teaching and School Leadership and a review of teacher education; strengthening school

curriculum and learning outcomes including values education, teaching of boys, tackling obesity, safer schools, Music Education review, and Innovation, Science, Technology and Mathematics in schools.

Again four of the five priority areas focus on curriculum development and assessment measured against this curriculum.

5.3.2 State Government of Victoria education priorities.

Each state has flexibility to implement federal policy. The majority of funding for government schools comes from the state budget.

In 2003 a *Blueprint for Government Schools* was released by the Victorian Department of Education & Training (Department of Education and Training, 2003a) to outline the government's strategies to transform the quality of outcomes for students. The components are: student learning, developing a new resource allocation model, building leadership capacity, creating and supporting a performance and development culture, teacher professional development, school improvement and the "Leading Schools Fund". The three priorities for reform were: "recognising and responding more effectively to diverse student needs, building the skills of educators to enhance the teaching–learning relationship and continuously improving schools" (Suggett, 2005, p. 1).

5.3.3 Research in the development of the 'Victorian Essential Learning Standards'.

The Victorian Curriculum and Assessment Authority (VCAA) commissioned a research project, *Curriculum for Victoria: Foundations for the Future* (2004a) to conduct a literature

research study of seven Australian and seven international curriculum and standards documents.

The summary of the research argues that "successful education systems are increasingly seen as key elements in social and economic success in the 21st century, a century in which knowledge based industries and the ability of societies to be innovative and productive are expected to be essential ingredients of progress" (VCAA, 2004a, p. 1). The research contends further that, in response to these beliefs within Australia and internationally, reviews of education have taken place throughout the past decade, acknowledging that "schooling is failing to engage significant numbers of students and failing to equip all students with knowledge, skills and attributes required to be effective citizens within a globalised economy" (VCAA, 2004a, p. 1).

Several key issues emerged from the literature research. In all except the *International Baccalaureate (IB[4])*, the conceptual frame works of the curriculum were based on subjects. The new curricula "do not appear to offer any great insights into new ways of conceiving how areas of learning or discipline knowledge might be structured and labelled for schools" (VCAA, 2004a, p. 4). Curricula differed in the values they placed on particular learning areas, however all were based on a historical and traditional model of curriculum organisation. Even though the central authorities varied along the continuum of curriculum advice to curriculum requirements, in Victoria where the curriculum is termed an advice document, accountability

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[4] For information on '*International Baccalaureate'* see www.ibo.org

is held tight with reporting to parents on all KLAs and documentation of time allocations for specific KLAs in annual reports to the department.

Meeting the challenges of the 21st century has brought about a new emphasis on outcomes such as connectedness, self-esteem, innovation and creativity. In curriculum documents statements related to these areas "are usually very generally stated and the links between these priorities and what teachers do in their classrooms is unclear" (VCAA, 2004a, p. 5). The question of how achievement in these areas is assessed is also an issue.

Curriculum depth or breadth is a debate. Breadth is seen as a way of helping students to identify areas of interest. However for the development of competence in an area of inquiry, it is thought students need a foundation of factual knowledge, with understanding of ideas in the context of a conceptual framework and organised in ways that facilitate retrieval and application (Donovan, 2000, cited in VCAA, 2004a, p. 9).

Metacognition requires students to analyse how they learn, how they know they have learnt something and how they can make visible their understandings. "Current curriculum documents generally do not make explicit the necessary link between student's growing independence as a learner and their acquisition of meta-cognitive understanding and skills" (VCAA, 2004a, p. 9).

A major issue identified is the alignment between content, pedagogy and assessment. "What has become apparent is that curriculum and assessment changes that are not also closely aligned with changes in teaching practice are not likely to promote rich contexts for learning" (VCAA, 2004a, p. 9).

While it is commonly accepted that students should be equipped to be good, responsible citizens, "there is no clear understanding of what the school's role, let alone the curriculum's role might be in this" (VCAA, 2004a, p. 10). The development of employability skills shares a similar problem: A report, Employability *skills for the future for the Commonwealth Department of Education, Science and Technology* (Australian Chamber of Commerce and Industry and the Business Council of Australia, 2002) identifies the skills and attributes believed necessary for young people to attain. However it is not explicit where these fit into a school's alignment of content, pedagogy and assessment.

Most governments have framed their curriculum documents to match perceived stages of schooling. A discussion paper, *Learner Characteristics* (VCAA, 2004b), was prepared as theoretical background for development of the Victorian Essential Learning Standards. The report highlights that until the mid 1970s descriptions of learning tended to reflect either Piagetian or behaviourist theory. Both approaches differed in their views of children's learning capacities, however both saw children as isolated learners. A shift in the view of cognitive development moved "away from the view that the process of learning is common for all individuals, independent of contexts, and toward a view that learners are participants in social practice and that the context affects the nature and the processes of learning (Brown, 1997; Brown & Palincsar, 1989; Palincsar & Brown, 1984; Rogoff, 2003; Rogoff, Goodman-Turkanis, & Bartlett, 2001)" (VCAA, 2004b, p. 2). The report however highlights developmental changes in children's thinking competencies, outlining what might be expected of a child in: (1) Preparatory to Year 4, (2) Years 5 to 8, and (3) Years 9 and 10. These developmental changes are in contradiction to the above statement, "that the context affects the nature and the processes of learning". In the document *Victorian Essential Learning Standards* these areas became described as the "Stages of Learning" (VCAA, 2004c).

Four key elements of 'best practice' were identified in the VCAA (2004a, p3) report: equity and inclusiveness; the encouragement of innovation and creativity with an emphasis on deep knowledge and a problem-solving, issues-based curriculum; clarity and focus in content specification and assessment for learning. The challenge in achieving these elements is the relationship between them within the school context. Each aspect is expected to occur simultaneously within a complex system in complete synergy, not as individual elements that come together to make a whole. When seen as individual elements, one element can easily undermine the achievement of the other elements.

The report states that any future reforms need to take into account the history and traditions of curriculum development in Victoria and respond to the challenges of an integrated knowledge based economy (VCAA, 2004a). The combination of these two goals is difficult, as the history and traditions of curriculum development in Victoria were developed in response to a totally different set of circumstances than we face in the world today and the current knowledge about how children learn has also advanced.

5.3.4 Student learning.

In 2004 the *Victorian Essential Learning Standards*" (Victorian Curriculum and Assessment Authority (VCAA) 2004c) were released. The standards consist of three interwoven strands each aiming to development knowledge, skills and behaviours in its particular domains (disciplines): (1) Physical, Personal and Social Learning: Health and Physical Education, Interpersonal Development, Personal Learning, Civics and Citizenship. (2) Discipline- based Learning: The Arts, English, Humanities, Languages Other Than English, Mathematics and Science. (3) Interdisciplinary Learning: Communication, Design, Creativity and Technology, Information and Communications Technology and Thinking. These domains are broken down

into elements called dimensions which, when combined, achieve the goals of the domains. In theory and in practice department curriculum advisors encourage the integration of these strands. In schools the debate continues over a trans-disciplinary curriculum versus a discipline based curriculum. In accountability of schools however, in the school annual report for 2006, time allocation to each of the disciplines was required to be documented by all teachers, which is difficult when a transdisciplinary approach is taken.

The new student report card in 2006 mandated the allocation of grades (A-E) with the ranking comparing children's progress within a year level against the set standards. Previously children's assessments had been presented on a continuum of development. In the new format, teachers were required to make assessments against each individual dimension of learning for each individual child. Again these assessments are difficult when a trans-disciplinary curriculum is implemented.

Statewide data collection is mandated through standardised testing of reading in Year Prep to Year Two, and formalised tests in mathematics and English in Years 3, 5 and 7. Ranking data as assessed against the Victorian Essential Learning Standards are collected yearly on all students in the areas of Mathematics and English. These data are used to compare schools' performance across the state.

Underpinning this model are defined stages of learning which children progress through. Stage One for 5 to 9 year olds, is where children learn fundamental knowledge, skills and behaviours, which underpin all future learning. Stage Two for 10 to 13 year olds provides an expanded curriculum allowing for in depth learning. In Stage Three 14 to 15 year olds develop greater independence of mind and interests. "They seek to make connections between their learning and the world around them and explore how learning might be applied to the

world around them" (VCAA, 2004c, p. 5). These stages reflect a developmental model of learning. A socio-cultural perspective would view the statement for 14 to 15 year olds as relevant to the learning of all children. The concept that 5 to 9 year olds learn skills, knowledge and behaviours to enable their 'future learning', negates the relevancy of the learning to their current lives and the influence of the development of scientific concepts on everyday concepts.

5.3.5 Principles of learning and teaching.

Principles of Learning and Teaching (Department of Education and Training (DET), 2005a) were developed following on from the research projects *Science in Schools* (DET, 2001) and *Middle Years Pedagogy Research and Development Project* (DET, 2003b) The principles argue that students learn best when: the learning environment is supportive and productive; the learning environment promotes independence, interdependence and self motivation; students' needs, backgrounds, perspectives and interests are reflected in the learning program; students are challenged and supported to develop deep levels of thinking and application; assessment practices are an integral part of teaching and learning; and learning connects strongly with communities and practice beyond the classroom. These principles relate closely to a socio-cultural perspective of learning. In the education department document, *Closing the Loop: Curriculum, Pedagogy, Assessment and Reporting,* (DET, 2005b), the education department acknowledges consistency between the four elements through the publication of: *Victorian Essential Learning Standards, Principles of Teaching and Learning, Curriculum planning guidelines and Assessment Advice* and the *New Student Report Card*. However with different theories of learning underpinning each element and the four elements viewed as isolated documents, this consistency is not evident in practice.

5.3.6 Victorian Schools Funding Model.

As part of the *Blueprint for schools* a new school resourcing approach was introduced with the *Student Resourcing Package* (DET, 2004). The model comprises Student- based funding, School- based funding and targeted initiative funding. Student-based funding is the major source of resources and is determined by year levels of schooling and the size of a school; it is allocated through a core student allocation and family characteristics allocation based on student family occupation, with integration funding for students with a disability and for English as a Second Language students. This funding model provides more funding to schools where families are from low socio-economic communities than the previous model of funding. School-based funding provides for school infrastructure and programs specific to individual schools, including cleaning, grounds maintenance, utilities, minor works and Work Cover. Initiative Based Funding includes programs with specific targeted criteria or limited life spans and for primary schools in Melbourne that include a LOTE teacher and Welfare Coordinator.

This model provides financial flexibility to principals and school councils to meet the diverse student and community needs. It encourages local solutions to meet student-learning needs through innovation.

5.3.7 Victorian Schools Teacher Employment Model.

Since 1995 Victorian schools have been able to employ their own staff through local selection panels. Some staff remain at schools where they have been employed since prior to this employment procedural change.

Principals of Victorian government schools select their own staff by making offers for employment at their school. The standard mode for employment is ongoing and positions offered may be full or part time, or for a specified period to cover teachers on leave. In this context schools are able to build up, or maintain, a team of staff that can provide the best possible teaching and learning in the school and also cater for the individual school's innovative programs. Local selection arrangements provide the most effective way of matching the individual's abilities and career aspirations with the specific needs of individual schools. Principals have the delegated authority and responsibility within the context of a legislative framework to manage the recruitment of staff as vacancies arise. Dismissal of staff with unsatisfactory performance requires the following of precise procedures and guidelines including periods of support to bring the person up to the required professional standard.

5.4 Social – Cultural Context: Description of the Community

> In contrast to theories of development that focus on the individual and the social or cultural context as separate entities… the cultural historical approach assumes that individual development must be understood in, and cannot be separated from its social and cultural context. (Rogoff, 2003, p. 50)

5.4.1 Local community.

The case study school opened in 1971, to service the educational needs of children aged 4.75 to 12 years in the local community of an outer industrial area of Melbourne, a vibrant culturally rich city. The case study school is located in the local government area of Greater Dandenong, 31 kilometres south east of Melbourne. Dandenong is the most culturally diverse locality in Victoria and the second most diverse in Australia. It is home to residents from 150 different nations of birth who speak over 40 different languages. Over half the population (56%) were born overseas compared to a 27% average across Melbourne. Three quarters

(76%) of the people in Greater Dandenong were either born overseas or are children of parents born overseas (Australian Bureau of Statistics 2001 Census). Each year some 2,300 new migrants settle in Greater Dandenong. Since the end of the Second World War Dandenong has been a settlement area for migrants including refugees on humanitarian grounds. In the 1950s large numbers immigrated to the area from Italy, Greece, Malta, Poland and Russia, escaping the devastation in Europe. In the 1970s many immigrated from Vietnam and Cambodia, many escaping war, persecution and poverty. Migration from these countries has reduced, however migrants from these origins still arrive under the family reunion program. New arrivals from Bosnia and Afghanistan came in the 1990s. Since 2000 large numbers of immigrants have arrived from Sudan, Afghanistan and Ethiopia. (City of Greater Dandenong, 2005, pp. 4–5)

The Index of Relative Socio-Economic Disadvantage (IRSED) score, derived from Australian Bureau of Statistics 2001Census data, shows the City of Greater Dandenong is the lowest-ranked of Victoria's municipalities. For more than a decade, the unemployment rate (11% in 2001) has been around 50% higher than metropolitan Melbourne. (Australian Bureau of Statistics, 2001 Census).

The diversity of Dandenong reflects the different cultural, religious and language backgrounds of its residents. It encompasses Aboriginal people, people born overseas and those born in Australia. The cultural diversity is visible in the range of food, restaurants, shopping, sporting and social activities and places of worship.

5.4.2 School Community: description of the participants.

5.4.2.1 Families.

The 345 children attending the school in 2006 come from racially and culturally diverse backgrounds. The study school comprises families and staff from forty different nationalities. 2006 data related to English spoken at home is: 65.5% (226) of children had both parents born in a non English speaking country and 4% (14) of children had one parent born in a non English speaking country. 17.69 % (62) of children were born in a non-English speaking country and for 58.26% (201) of children, English was not the first language spoken at home. 14 (4%) of children had a Koori background. The 2006 data related to financial backgrounds revealed: 51.59 % of parents were recipients of Educational Maintenance Allowances due to financial difficulties (*SMIS Student Enrolment Report*, March 2006). The school has a like school grouping of 9, the highest category level of disadvantage, in terms of ESL children (English as a Second Language) and EMA recipients (Education Maintenance Allowance).

5.4.2.2 Staffing.

In 2006 staffing comprised 24 teachers and 9 school support officers (SSO). The SSO roles were one business manager, one office manager, one language assistant, and six student integration assistants supporting eighteen integration students, fourteen with an intellectual disability, two with a physical disability and two with a behavioural disability. SSO cultural backgrounds were Anglo Saxon (7), Serbian (1), and Sri Lankan (1).

Staff comprised a Principal, an Assistant Principal responsible for teaching and learning, a part time Physical Education teacher and a part time Art / Project development teacher working within classrooms and in the art studio. All other teachers worked collaboratively in complexes: Prep unit – two teachers; Year 1 unit – three teachers; Year 2 unit – two teachers;

Year 3 unit – one full time and two part time teachers; Year 4 unit – two teachers; Year 5&6 unit – five teachers and the Da Vinci centre – three specialist teachers: ICT, LOTE/ Welfare and Librarian. A music assistant worked one day a week with choirs and a rock band in the da Vinci centre. The teaching staff ranged in age from 23 to 66 years. Teaching staff's cultural/ racial backgrounds were, Greek (3), Italian (1), Pakistan (1), American (3), Anglo Saxon (12), Malaysian (1) and Jewish (3).

Additional staff funded from the regional office, outside the *Student Resources Budget* included: A Koori educator working in the school one day a week; a school psychologist working one day a week completing student assessments and student counselling and a speech therapist working one day a week. A concert band teacher who worked in the school one morning a week teaching instrumental music was provided by the local secondary college.

The school had a connection with two universities, which involved the placement of engineering students to work on projects with the school students and semester length programs for postgraduate education students, who carried out classroom projects and tutorials based at the school. These projects brought students and lecturers with various areas of expertise to work with students and teachers at the school.

5.5 A History of the Actions of the School

In this section I examine the history of the actions of the school, examining the development of the pedagogy within the school, the development of the physical environments, my documentation of current principles, beliefs and practices of the school and the professional development of the teachers.

5.5.1 Pedagogy development.

5.5.1.1 1970s and 1980s.

In the 1970s the teaching and learning approaches at the school had been generally conservative, with traditional methods of instruction. Some new initiatives were introduced in the 1980s: integrated studies in 1981, 'Process Writing' (Raimes, 1983) in 1983 and a 'Whole Language' (Goodman, 1982) approach to literacy in 1987.

5.5.1.2 1990 – 1996.

In 1993 attention was directed towards catering for the needs of gifted and talented children through withdrawal programs. In 1994 the school became a Regional Resource Centre for gifted and talented students, providing withdrawal sessions with experts for children across the region. The Gifted and Talented cluster coordinator was based at the school. Senior staff members were often called upon to advise parents and teachers from other schools. A school withdrawal program allowed talented students to collaborate with like minds. The school appointed a coordinator for Gifted and Talented Students and Special Programs. Entry of students over a number of years in competitions including the State Science Talent Search, Maths Talent Quest, Tournament of Minds and the RACV Energy Breakthrough, resulted in students winning major awards in all of these events. The students representing the school broadened from only the selected gifted and talented students to a cross-section of students with a variety of abilities and interests. This suggested that most students could excel if provided with the right scaffolding and motivation. The coordinator subsequently undertook further studies at Charles Sturt University, under the direction of Professor Eddie Braggett, where she was influenced by the work of Robert Sternberg, Anthony Gregorc, Howard

Gardner and George Betts. The influence of the above educational theorists was to subsequently shape the teaching and learning changes introduced by the school.

Despite the successes of the program, there were two problematic issues. Withdrawal programs often created disharmony within the classroom and despite the success of the "add on" programs for talented students, the lack of connection between gifted and classroom programs did nothing to improve student engagement, when students returned to their classrooms. Moreover, selection of children who were gifted and talented was becoming more difficult as the definition broadened.

The problem was of most concern with Year 5 & 6 students, where the lack of student engagement in meaningful learning was visible. One particularly bright student stayed up late one evening preparing an entry for the State Science Talent Search. His entry was subsequently awarded a High Distinction. However, the very next day the same child 'engaged' himself in his schoolwork by getting some of his maths work wrong and proceeding to watch in amusement as the class teacher used his answers to correct other children's work. It was with Year 5 & 6 students that the school commenced their journey to transform the school.

Encouraged initially by a desire to cater for the individual needs of gifted students, the school's focus shifted to developing a whole school approach for talented children and eventually to differentiating the curriculum for all students. This focus evolved to create a learning environment where students were encouraged to accept responsibility for and to be actively involved in their own learning.

5.5.1.3 1997: The Autonomous Learning Unit.

The Principal was influenced by research in the mid-nineties, in particular the writing and lectures of Professor Hedley Beare and the text by Seymour Papert (1994), 'The Children's Machine: Rethinking school in the age of the computer', regarding the need to revolutionise schooling to respond to the rapid changes happening within the world through the influence of technological advancement and globalisation and the impact this would have on the future needs of children being educated today.

The Principal initiated a discussion group comprising the Year 5 & 6 teachers, the current Assistant Principal and the Leading Teacher who was the gifted and talented coordinator and specialist teacher (myself) to discuss implementing a new approach in Years 5 & 6.

The group met weekly for six months to discuss the change. An educational consultant was employed to support the review and development process. Joan Dalton was the consultant for the process emphasising the need for deeper student engagement (Dalton & Boyd, 1993). The group struggled to collaboratively produce an outline of the proposed unit. The Leading Teacher, who had completed a course at Charles Sturt University, developed an outline based on her work with the Betts (1985) 'Autonomous Learning Model'. The influence of Professor Betts is summarised:

> The Autonomous Learner Model presents a philosophy to facilitate the development of children as independent, self-directed and life-long learners… defined as those who solve problems or develop new ideas through a combination of divergent and convergent thinking, and function with minimal external guidance in selected areas of endeavour. Children come to school [as] autonomous learners. However the current system transforms them into students, where conformity is important and test results [are] the focus. (Capp 2004, p. 5)

In order to implement this vision, the school established the 'Autonomous Learning Unit' for Year 5 & 6 students in 1997.

The following in a school document (1999) outlines the changes:

The teacher-dominated classroom, with its lock-step approach to curriculum and emphasis on factual knowledge was rejected in favour of:

- preparing students to accept responsibility for their learning;
- helping them to think creatively;
- assisting them to view their strengths and weaknesses positively;
- teaching them the skills they needed to access knowledge.

The following plans were developed, to be introduced in 1997:

- Year 5 and 6 students were grouped into a single entity.
- Four traditional classrooms were redesigned and alternative furnishings added.
- A team of teachers, teacher and integration aides appointed to manage the unit.
- Teachers took on the multiple roles as facilitators and teachers.
- Children were placed in varied groupings including, a mixed ability home group, and flexible ability groupings to attend workshops and elective groupings to cater for passions.
- Traditional specialist classes incorporated within the general curriculum.
- A more flexible approach adopted to administration and planning time.

- A flexible two-week timetable was developed.
- Students were to be pre-tested so as to avoid unnecessary work assignments.
- Curriculum planned so as to provide a differentiated program of learning for all students.
- Students were placed on individual learning contracts.
- Assignments were developed which supported a differentiated program.
- Programs such as Tournament of the Minds, RACV Energy Breakthrough etc. were to be incorporated into the curriculum.

The unit facilitated 120 students and a collaborative team of 4 teachers, an integration aide, a 0.4 teacher aide and the Leading Teacher coordinating the unit in a 0.5 allocation. Individually students were allocated a home teacher to monitor their progress and support them in the development of their learning. Students met with their home teacher at the beginning of the week for planning and at the end of the week for reflection. Teachers were timetabled with three hours of conferencing time each week to talk with their students alone or in small groups, to reflect upon their learning and discuss issues pertinent to the student both personal and educational. A variety of learning contracts were used to facilitate negotiation between students and teachers to monitor and support student learning.

Interviews from *Beyond the Pilot Research Project* (Capp, 2004) provide student and teacher perspectives,

> We were trying to solve the problem of teacher imposed learning, we wanted their learning to come more from the children. We wanted the children to develop an independent ability to have self-control, rather than being teacher controlled. We wanted the children to have a say in their own curriculum and we wanted it to relate to what they were doing, rather than imposing it on top of them. … We wanted them to

> try and find out their strengths and their weaknesses by trying to work out their learning styles, how they were going to learn. We wanted to find out what they were interested in learning. We wanted to make them think. We wanted them to access information rather than just being given information.
>
> (Experienced teacher 2, p. 6)

> Well, you fill out a project form on the back of your contract. It basically asks you what your project's about …You have to go negotiate with your teacher, why do you think you should do it, what you can learn from it and if they give you the all-clear, then you can go ahead.
>
> (Student perspective, p. 6)

In 1997 the Year 5 & 6 Autonomous Learning Unit won an 'Excellence in Education Award' from the Victorian Association for Gifted and Talented Children. The unit's philosophy and organization remained consistent over the following years; however each year would see an ongoing development in curriculum organization, responding to the strengths and weaknesses of the students and teachers, and the results of current action research into teaching and learning within the school.

5.5.1.4 1996: differentiation and negotiation.

Two key concepts in making learning relevant to students and engaging them in their learning are differentiated curriculum and negotiated curriculum. Differentiated curriculum was defined by the school as "catering for students, learning styles, learning modalities, interests and abilities in planning the curriculum" (document/ 2006/ guidelines), while negotiated curriculum was defined as "teachers and students working together to make decisions about the learning opportunities available" (document/ 2006/ guidelines). These concepts at this time began to influence the whole school pedagogy and curriculum development.

The following quotes from the *Beyond the Pilot* (Capp, 2004) research project outlines its influence:

> We have learning agreement time, where the students negotiate or select tasks that they'd really like to work on, and they develop those tasks in a timeslot with facilitating teachers. I have workshops that might highlight or zoom in on specific skills that the students will need to accomplish tasks…an interesting, diverse week that could change if a student or a group of students has a particular interest area or whatever. (Experienced Teacher 1, p.11)

> The mornings are really a huge part of our day. They come in and they settle into whatever activity they want in the morning, so when they come in I like to give them a choice and say, 'Where are you going to start today?' and the kids really respond well to that and choose somewhere, and recognise that it's their responsibility to choose an activity that's going to engage them. (Beginning Teacher 2, p.11)

> Meeting at the end of learning agreement time we have sharing time which allows the students to describe what they've been involved in and this has, really, a lot of purposes. … It gives other students ideas from what each other are doing…and it enables them to start thinking and seeing things in other ways, and to celebrate the learning that they're involved in. (Beginning Teacher 3, p.12)

> The school believes we are different learners, and everyone's different. (Student M2, p.11)

> You've got a lot more independence than you would in other schools I've been to. You don't get to do whatever you like without producing some evidence that you know what you're going to learn… you've got a contract. (Student F2, p.11)

5.5.1.5 1998: Reggio Emilia influence.

Observation of students in the Year 5 and 6 complex in 1997 lead quickly to the realisation that their experiences in a teacher dominated program for the previous five years had

embedded mindsets that were difficult to change. These included wanting direction and teacher approval of their work. It was realised that a change in approach was needed from Prep Year. In 1998, research began to seek an approach that could be implemented in the lower grades of the school, to meet with the school philosophy being implemented in the Year 5 and 6 Unit. When looking for an Early Childhood Centre for her own child, the Assistant Principal came across the Reggio Emilia experience. During this period, when presenting an overview of the Autonomous Learning Unit to student teachers at Monash University, the Assistant Principal had the opportunity to discuss this educational philosophy further with a lecturer and contact was made with the Reggio Emilia Information Exchange (REIE). The Reggio Emilia experience was explored throughout 1999 and researched in the school through a trial in one of the Year 1 and 2 classrooms in 2000.

The major influences from the Reggio Emilia experience were: a powerful, capable 'Image of a Child'; a belief that children have a 100 languages or more to express themselves; a pedagogy of relationships influenced by the pedagogy of listening; the use of documentation to make learning visible; the view of the physical environment as a teacher and a belief in education for democracy.

In 2001, a new Prep program was developed inspired by the Reggio Emilia Project and the experiences of working in a new way in the Year 5 & 6 unit. A beginning teacher from the trial in 2000 was teamed with a referred graduate from Monash University. The Assistant Principal led the team implementing the new approach. Throughout the year the program was continually reflected upon with the goal of researching ways to create meaningful, purposeful learning experiences for the children. The emphasis had changed from the educational focus of

preparing children for the future, to that of valuing the potential of children, their curiosity and desire to find meaning in everything they experience.

A parent who had twin children in the Prep complex stated in an interview reported in *Beyond the Pilot Research Project* (Capp, 2004):

> Because both my children have a different learning style, the prep unit caters for that…and that's where the prep unit allows both of them to learn the same amount of work, or want to learn, or ask, or be curious to learn things, but they can do it in their own way. (p. 10)

The goal throughout the year was to support and allow children in prep to develop an understanding of the purpose of reading, writing and mathematics in the world around them and to use these understandings in meaningful contexts. To value and extend the children's skills as questioners and researchers through projects was also a priority. Activities were set up in the classroom to provoke children's engagement and cater for the various learning styles. The prep children in 2001 lead the approach through the school in consecutive years, so that this cohort of children in 2006 were in the Year 5 & 6 complex.

In 2003, this group of children in Year 2 with teachers developed the project 'What is a puppet?'. It was negotiated with a student teacher, that as part of her teaching practicum she would document the ten-week, trans-disciplinary project through a film. The project was successful in engaging students in a long term, in-depth project and empowering in terms of communicating to parents the school's approach and displaying the potential of the children.

5.5.1.6 1999: The da Vinci Centre.

In looking for ways to provoke children's thinking, the creation of a da Vinci Centre was planned and implemented to provide students with stimulus in the areas of Science, Technology and Creativity. It was anticipated the provision of creative and interesting equipment and experiences would provoke the children's thinking, which might in turn stimulate the development of deeply meaningful projects and investigations.

Initially, a creative teacher had been employed to coordinate the Da Vinci centre. The teacher planned thought provoking lessons, however, she implemented a teacher dominated approach, and the children initiated little of their own learning.

In 2001 a beginning teacher with a Bachelor of Science degree as part of her teaching role monitored the Da Vinci Centre, working in the centre for four afternoons per week. This left the centre unattended for most of the week and although the staff used the centre, monitoring resources management was challenging. The school was part of the government's 'Science in Schools Project' (SIS) during 2001. The beginning teacher in both first and fourth term was involved in the writing of plans, testing students and report writing for the project. During second and third term the focus was the 'State Science Talent Search'. Stabilizing a program in the Da Vinci Centre to meet the school's goals continued to be a challenge.

In 2002, a teacher from overseas was 'head-hunted' to coordinate the Da Vinci Centre, commencing in 2003. He brought to the school a passion for and extensive experience in, media literacy. He led students in projects involving film production, animation, song writing,

web design and computer game design. With funding from the *Boys' Lighthouse Project*[5], he established a radio station in the school which broadcasted within a three kilometre radius. He also established connections with *School's Television*[6] and the *Sound House Alliance*.[7] With this focus on several in-depth projects, a limited amount of children had access to the teacher's expertise. In late 2003 the teacher developed the idea of the whole school creating a short feature film and worked with students to develop a script. In 2003 many projects were initiated by students with the teacher facilitating many students' work on a variety of projects. The teacher makes the following comment in the *Beyond the Pilot Research Project* (Capp, 2004)

> What the Reggio thing [see below] for me is saying, 'What is this child passionate about?' … They're naturally excited about learning, so if they're not curious and they're not excited about learning, then we're doing something that's not reaching them or not being conducive to their natural state, and so by actually having that assumption right from the beginning, then it puts the onus on the teaching and learning environment to change to suit the child. (p. 9)

In mid 2004 the teacher, because of family reasons, returned to New Zealand. A part time replacement was employed to complete the film project. In 2005 the centre was monitored by

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[5] For information on ' Boys Lighthouse Projects' see http://www.findanexpert.unimelb.edu.au/display/grant10536#time

[6] For information on 'Schools Television', see www.sofweb.vic.edu.au/schoolstv/

[7] For information on '' Sound House Alliance', see www.**soundhouse**.com.au/

the beginning teacher and the school computer technician, with classroom teachers able to use the facility.

In 2006 a new Da Vinci centre was redesigned and constructed placing it at the centre of the school. The school ICT teacher, Librarian and Welfare /Languages other than English (LOTE) teacher were based in the centre.

5.5.1.7 2001: Authentic learning.

As part of a research study, 'Middle Year Literacy' became a focus, concentrating on the use of authentic learning, where the students could clearly see the purpose and relevance of their learning activities. Project examples included children requesting and consequently researching and ordering fitness playground equipment for the school, and children co-planning and organising a school camp to Wilson's Promontory.

5.5.1.8 2001: Documentation.

Documentation of children's learning became important; it made visible the children's learning to inform future learning and planning and to support communication with parents.

Documentation took on various forms including photography, film, recording of student comments and ideas, student portfolios both hard copy and digital and student led conferences. In 2001 learning profiles were developed to track student skills in the areas of English and Mathematics. In 2006 a research team of teachers and mentors developed a curriculum plan incorporating key understandings in English and Mathematics.

Teacher perspectives from *Beyond the Pilot Project* (Capp, 2004),

> I see documentation as a recording of a child's learning, so that we have actual evidence of what a child's learning. If we're not doing formal assessments, we need to be able to show what a child is doing, where they are on their learning journey, so documenting their conversations, the processes involved in, perhaps, math calculations they've done, documenting their explanations of what they're doing, recording their conversations at a reflection time when they're reflecting on their learning, samples of their work, digital photographs, ordinary photographs, video clips, anything that can show what they're actually doing and presenting that in some way. The children have portfolios, personal portfolios, which is a record of their learning journey.
>
> (Leading Teacher 4, p. 12)

> [F]irstly, for the kids. It's really important for them to recognise their learning journey, so a lot of the documentation I use is including a lot of photos so that the kids recognise what they were doing, 'cause some of them still can't read, so that they can recognise where they started and where they're going to and reflect on the journey as much as we can. Then it's for us, to recognise the process we've undertaken, and where we started, and the different thought processes that have been included, and all the different aspects of their learning and then, also for the parents, to get the parents involved. … it gives them a sense of understanding of what's happening in the classroom which, hopefully, ideally, they go home and discuss with the kids.
>
> (Beginning Teacher 2, p. 12)

5.5.1.9 2003: Research projects.

Authentic learning led to the school continually questioning the relevance and the learning involved in project work. Making connections to the real world and the children's lives became a focus. This led to inquiry based research projects becoming a focus.

5.5.2 Physical environment.

The original buildings built in 1971 consisted of central corridors with individual classrooms accessed from the corridors. The specialist facilities comprised a library, art room and general-purpose room.

In 1996 four classrooms and the adjoining corridor space were converted into the Year 5 & 6 unit (Figure 5.1). The space comprised a room for art activities, a room for computers, a conference room which had large and small boardroom tables, couches and a circle of comfortable chairs. There was a space for student lockers and also a separate bag room and teachers' office. Two spare classrooms within the school were used to take workshops.

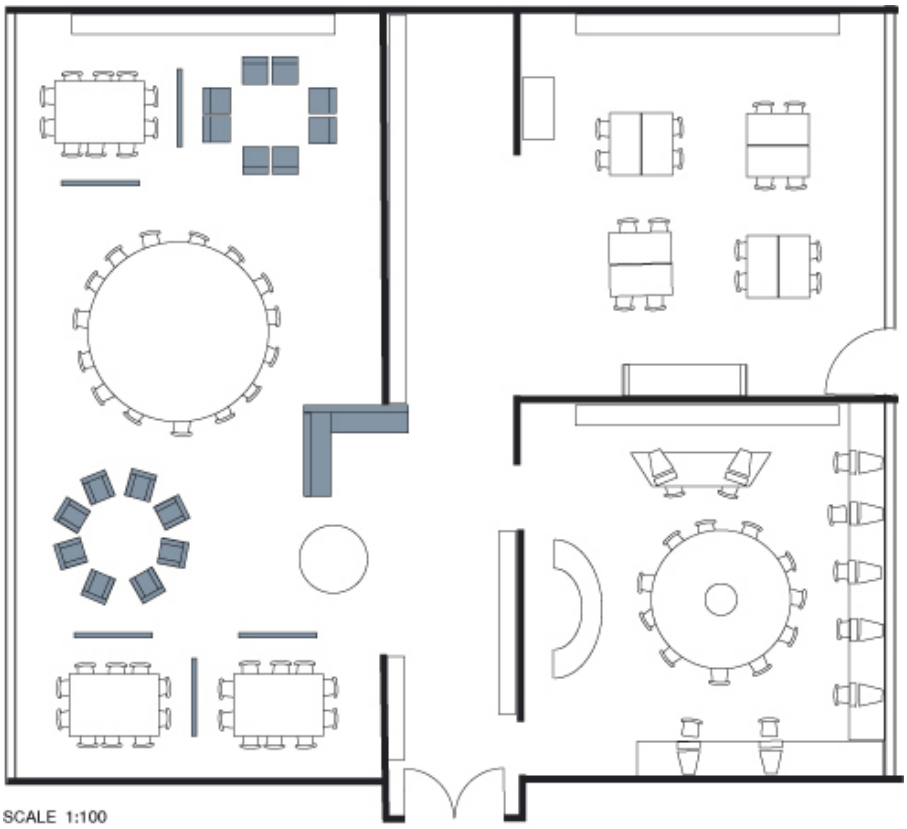

Figure 5.1 Year 5 & 6 Unit 1997

Two additional workshop areas were built above the toilet block next to the Year 5 & 6 unit in 1997, with access via stairs inside the Year 5& 6 unit and from outside. An outdoor rotunda area was also built next to the unit. This allowed the extra classrooms in the school used by the Year 5 & 6 unit to be converted into the Da Vinci Centre.

Between 1997 and 2001 all other classrooms within the school were opened up to create learning units to allow teachers and children to teach and learn collaboratively. Classrooms were extended and corridors incorporated to create more space within the units. Classrooms were refurbished with second hand furniture and soft furnishings to make the environments more comfortable, and cater for a diversity of experiences.

In 2003 the Assistant Principal requested the assistance of interior designer Mary Featherston to develop a suitable interior design for the Year 5 & 6 unit. She redesigned it in 2004 using existing furniture. In 2005 the school became involved in a project called, 'Designing schools from the Inside Out', which saw the children, teachers, leadership team and the interior designer work collaboratively on a research project to redesign and refurbish the unit (Figure 5.2, Photos 5.1, 5.2 & 5.3)

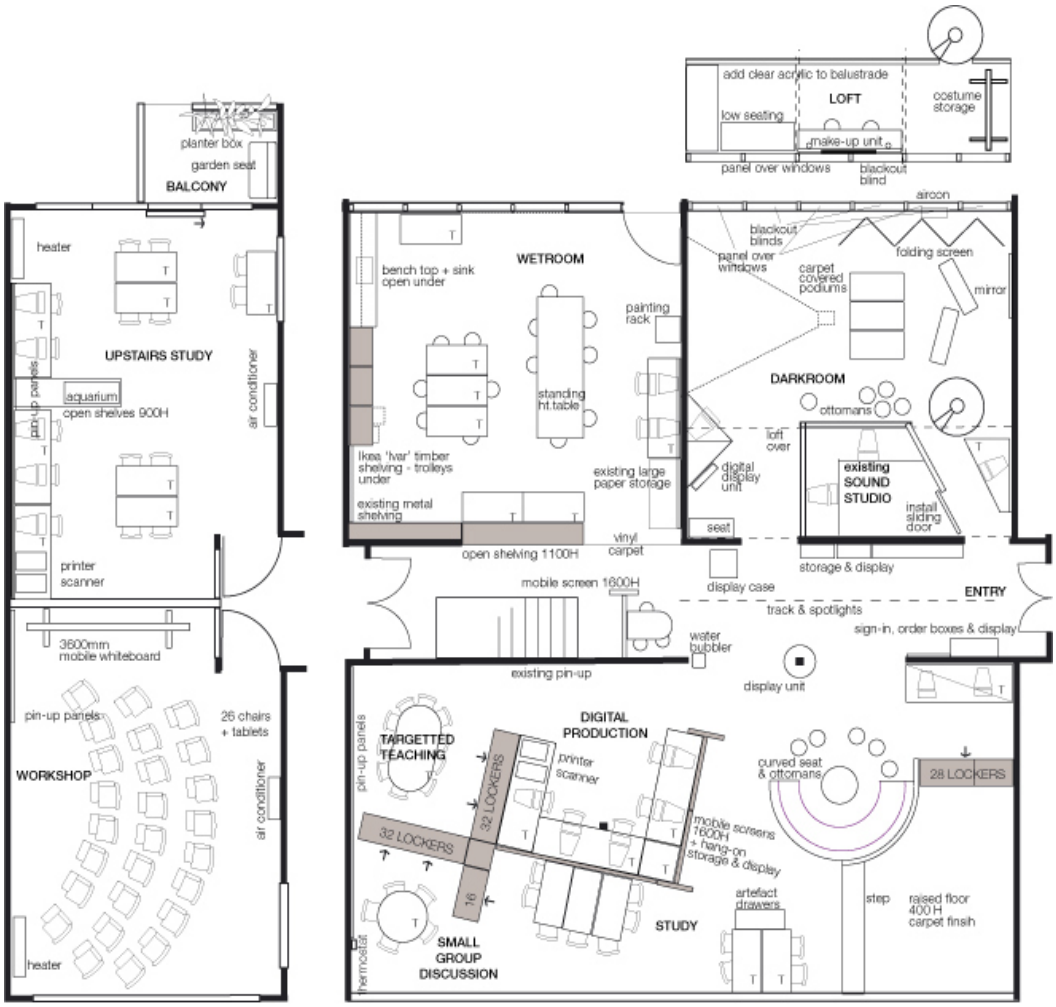

Figure 5.2. Year 5& 6 Unit 2005 Mary Featherston



Photo 5.1: Theatre Space Photo 5.2: Art Studio Photo 5.3: Reading & Meeting area

The project is documented and analysed in Chapter 9. The project also involved the development of a master plan for the school. In 2006 the Da Vinci centre was repositioned to the centre of the school and refurbished (Photo 5.4, Figure 5.3).

Photo 5.4: Entrance to da Vinci Centre

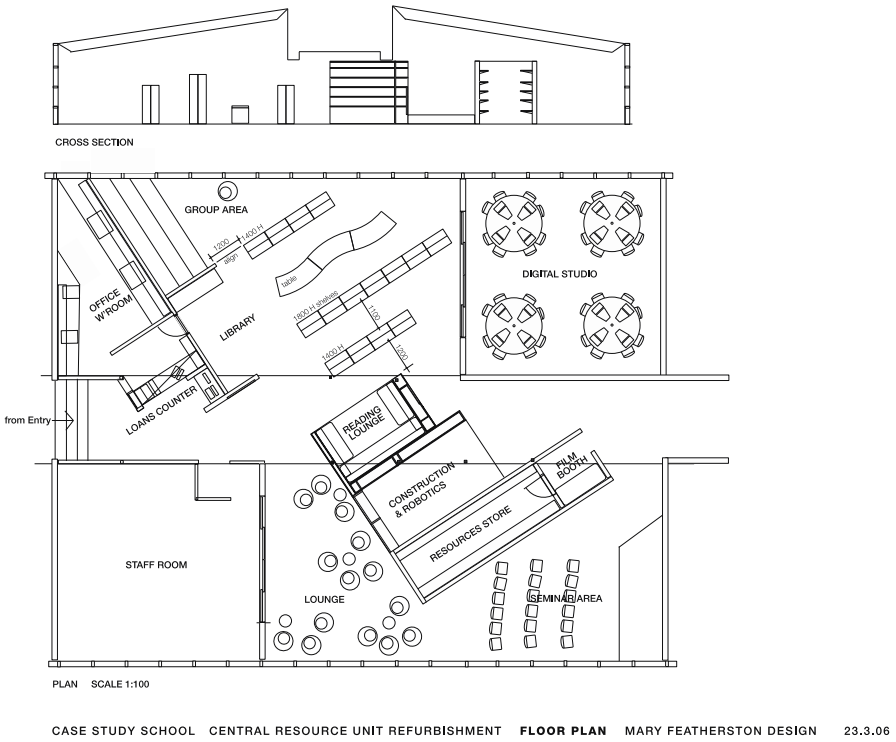

Figure 5.3. Da Vinci Centre 2006

5.5.3 Documented principles, beliefs and practices of the case study school.

The learning within the institution is directed by the beliefs and principles of the institution. These are implemented in the institution through pedagogical practices, assessment of these practices, the organisational structure and the physical environment. Table 5.1 outlines the interconnection of these aspects of the institution. I have developed this table to summarise and bring together the current beliefs about the key institutional practices that make learning happen in the school. These were identified through this case study analysis, which also aligned the principles of learning with pedagogical practices, assessment of learning, organisational structures and the physical environment. These elements were not discrete, but interrelated to form a multitude of nuances.

Table 5.1

The Principles, Beliefs and Practices in the Case Study School

Principles of Learning	Pedagogical Practice	Assessment	Organisational Structures	Physical Environment
Children are active, important members of a variety of communities, which may include: family, school, ethnic cultures, sporting teams and friendship groups; their understanding of the world develops through these social and cultural interactions.	Communities of learners Collaborative learning Modelling collaboration through team teaching Use of mentors Co-creation of the curriculum by children, parents and teachers Exploration of 'big ideas'; issues important to children, families, community and their future A focus on the exploration of values, attitudes and character development by the school community	Analysis of collaborative learning initiated by children, within the learning communities Analysis of questioning and discussions of children Documentation of the learning process includes teacher's and children's voices Analysis of parent involvement in the learning program Parent surveys Peer assessment	Communities of learners (averages 48 children in Years Prep–4, 100 children in Year 5/6 complex) stay together throughout their learning journey in the school. The support and interaction of families is viewed as part of this community Teachers, children and integration aides work collaboratively within learning complexes Mentor relationships developed in meaningful contexts Flexible timetabling allows for varying forms of collaborative learning and negotiated learning Links between families and school: • Open classrooms from 8:30 to 9:00am for parents to collaborate with their child in beginning the school day and throughout the day • Junior school 3:15pm reflection time, parents welcome • Weekly newsletter, classroom alternating with school publication • Parent meetings with open question time • Communication diaries • Exhibitions of learning throughout the year	Large areas created to allow for communities of learners, involving collaborative teaching Reflection of the children in the environment Shared facilities and tools for learning
Education must	Exploration of	Documentation	Open ended questions	Purposeful selection

Principles of Learning	Pedagogical Practice	Assessment	Organisational Structures	Physical Environment
value and support democracy. The rights of a child necessitates they have a 'voice' which is actively listened too Children are to be respected.	and listening to the '100 languages of children' / Multi-literacies developed Documentation to make learning visible Choices in learning· Negotiating learning Active citizenship, including student leadership teams and committees	of the '100 languages of children' to make learning visible; displayed through wall panels or folders Weekly analysis of Learning Journey forms which document the negotiated learning (children, parents and teachers involved in Years 2–6) Student surveys	focus discussion forums on specific big ideas (involving children and teachers); which informs planning Analysis and interpretation of documentation: observations, artefacts and conversations inform practice Child 'Learning Journey' proforma used to document negotiated learning Class meetings / Class Parliament are a forum for student initiated ideas	and design of every physical element for a welcoming, amiable, purposeful, clarified environment Physical design to support comfortable, aesthetically pleasing learning environments Diverse spaces are always available to the children, enabling children to move freely from one setting to another throughout the day
Learning is life long. Children are born with the potential to be autonomous, curious, powerful learners with a desire to make meaning of all experiences they encounter. The knowledge and technological age has transformed the concept of being 'educated'.	Inquiry based learning Learning to access different ways of learning Learning to access knowledge Learning though passion studies Sustaining attitudes of self-responsibility and self-motivation for learning Development of time, organisational and change management skills ICT as research, documentation and creative tool Teachers as co-learners with children and as	Digital and hard copy portfolios which share the journey of the child through the school Student led conferences mid year and as required End of year portfolio evening Assessment criteria is made explicit through learning profiles, key understandings and rubrics Analysis of discussion forums re teacher participation Teacher professional development plans	Learning agreement time (LAT) each day Daily ongoing reflection on learning: • Self reflection • Group reflection • Teacher directed reflection Weekly individual or small group meeting with home teacher (conferencing) to discuss learning and personal welfare Staff have collaborative planning time Weekly staff meetings and team level meetings with a pedagogical focus (Administration through emails and school intranet) Teacher professional development includes: mentors, professional reading, interstate and overseas travel, university links, Designer PD	On going maintenance, enrichment and evolution of the environment Some areas are semi permanent (stable) whilst enabling flexibility for temporary change· Provision of home group meeting areas Display areas for 2D, 3D and multi media work· Other purposeful areas within the school: • Art Studio: large projects • Research Centre: Literacy resources • Da Vinci Centre: Radio station, blue screen • Asian studies: Japanese resources • School hall: presentations/ whole group meeting space

Principles of Learning	Pedagogical Practice	Assessment	Organisational Structures	Physical Environment
	researchers Team teaching to promote reflection through dialogue	Teacher performance reviews		
People construct and co-construct meaning. People bring to any learning situation pre-existing understandings and theories, which are always partial. Learning is not linear.	Listen for pre-existing understandings and theories Differentiation in the program to cater for different abilities, interests, experiences, attitudes and temperaments Scaffolding of learning in meaningful contexts Meta-cognitive skill development Reflection on learning	Tracking of students understandings through a variety of techniques: checklists, anecdotal records, interviews, school developed profiles of learning and key understandings Reflection by children, parents and staff	Target teaching to scaffold learning (group size 1-15) Workshops to promote opportunities for LAT (group size 15–25) Tracking of children by home teacher (average 24 children) Variety of grouping practices used: interest, need based, random selection, child selected Limited use of specialist programs outside of learning complexes (Japanese and Physical Education)	Creation of functional areas within the space for specific purposes Provision of diverse and rich settings to support a wide range of experiences - each setting to have an appropriate sense of place enclosure and to provide clues as to use
People learn through engagement in complex experiences, in which they make relevant, purposeful connections. Skills and a body of knowledge are needed to acquire success in life.	Philosophical questioning Research based projects Authentic / Real Life learning Tasks· Discipline knowledge and skills are learnt in context Trans-disciplinary learning Higher order thinking Deep learning: content and processes Critical, lateral	Exhibitions of children's work through a variety of languages which also demonstrate the process of learning through documentation Level of engagement of children	Planning by teachers of ' Big ideas' to be addressed during the year, implementation of which is a collaborative process between children, parents and teachers High level teacher knowledge of the Victorian Essential Learning Standards to implement Government policy within a contextual learning framework High level teacher knowledge of current research, and teacher initiated school based research, inform understandings of how people learn and is reflected in practice	Each type of experience requires different facilities (space, boundaries, services, surfaces, storage, acoustics, furniture, learning materials) Diverse settings are seamlessly connected Clear circulation routes

Principles of Learning	Pedagogical Practice	Assessment	Organisational Structures	Physical Environment
	and creative thinking			
People have particular pre-dispositions to learning styles, modalities of learning, and intelligences.	·Meta-cognitive understandings of learning Personal differences are valued Promoting a positive self-esteem, self-confidence, resilience and tenacity Pedagogical practices cater for varying dispositions of learning	Collaborative analysis of preferred dispositions of learning involving child, parents and teachers	·High level teacher knowledge of learning dispositions informs all aspects of pedagogy	Provide discreet settings with appropriate enclosure to avoid visual and aural distraction Attractive provisions of loose items, which provoke, attract, stimulate, support and engage children's minds and bodies Acoustic design for expression and listening Freedom to move within the spaces

5.5.4 Professional development.

Professional development became a catalyst for change as well as a means to develop the understandings of all staff in the school philosophy. Professional development had held a high priority in the school since the mid nineties. In 1997 the Assistant Principal attended the "Autonomous Learning Conference" in Colorado and a teacher attended the "International Thinking Conference" in Singapore.

> Attendance at these conferences gave credence to the teaching and learning programs at our school, and confidence and reassurance to the school community that we were on the right track. (Assistant Principal Beyond the Pilot Research Project Capp, 2004, p. 12)

In 1998, Professor George Betts from Northern Colorado University was employed to work with the whole school community for several days, in both May and August. Professor Betts

worked with children and teachers in their classrooms and was able to observe the school in action. He also held full day conferences with staff, which parents were invited to attend. A special evening for parents was also conducted.

The Principal and Assistant Principal attended presentations by Michael Fullan and his colleague Carolyn Rolheiser in 1999. The Principal also attended several presentations on school change including Professor Headley Beare, through the Self-governing Schools Project. The presentations emphasised the centrality of a co-operative and collaborative environment to achieve change in education.

> We learnt from Fullan, that we made the mistake of not taking the whole staff with us. Instead we had anointed the teachers in the 5/6 unit. In the future we would work with the whole staff. (Principal, p. 13)

In 2000, there was a changeover of ten staff members (due to changes in staffing employment procedures), so professional development (PD) became difficult due to the variety of backgrounds and experiences of the current staff.

> We need more time and experience to develop, as teachers, in a different way. Often the course of learning in our room is affected by us as teachers, our lack of knowledge about how to do it differently, collaboratively, to empower the children, and our own assumptions and personalities … The need for control is still quite strong, I think, for a lot of teachers letting go of that is really quite difficult. (Beginning teacher 1, p.13)

> Because there's such a lateral sort of aspect to the planning, you have to be constantly thinking. There's not an opportunity to step back … [because] you are the creator, with the children. (Experienced teacher 1)

The combination of the enrolment of new teachers into the philosophy and working with teachers who had been resistant to change was a challenge. However, it was understood that

simply providing professional development did not change mindsets about educational pedagogy.

> Teachers needed to engage in educational dialogue and trial approaches in their own teaching. Teachers also needed a mindset of being a lifelong learner, and an understanding that there were no quick fix answers or formulas to follow.
> (Assistant Principal, p. 14)

> Often teachers look to me to provide them with the answers as to what to do within their classrooms, where in fact the answers lie within the classroom: a new relationship with their children, enhanced by the pedagogy of listening; a new mindset as to their role as an educator … as a co-creator of the curriculum and facilitator of learning; and as a collaborator and researcher with their colleagues. (Assistant Principal, p. 14)

In 2001 the Assistant Principal led a two day staff conference, "The Challenge of School Change". The focus of the conference was to share the journey of the school, and to begin dialogue so as to develop common understandings of the school philosophy.

Professional Development was an important element in developing the school's innovative approach to teaching and learning. The philosophy underpinning the practices in the school was continually evolving. Professional development took place in a variety of ways: employing educators with specialist knowledge to work in the school with teachers and children; links with lecturers at both Deakin and Monash Universities; discussions with leadership at Bialik college; Reggio Emilia Information Exchange: Seminar days and network meetings; teachers involved in local cluster PD, sending teams of teachers off to PD to facilitate later dialogue; and sharing of professional reading and discussions at meetings including staff, team level, unit, leadership and focus groups meetings.

> I think that one of the positives is that a lot of the unit meetings are based, rather than being on just the daily practicalities, that they're based on educational discussion. And I think the fact that the school promotes Professional Development very highly, and promotes it for large groups so that, rather than one teacher going off and finding out about something, a few teachers go off, and there's now a forum for discussion about ideas that they've picked up there. (Leading Teacher 3, p. 14)

5.5.5 Parental involvement.

Parents were involved in the initial changes in 1997 through discussion forums, parent surveys and seminars with Professor George Betts. In 2000 a group of parents from School Council went on visits to two private schools in Melbourne who were influenced by the Reggio Emilia Pre-Schools Project.

Keeping parents informed about the ongoing philosophy being developed was a continual challenge. Discussions with School Council, parent information sessions, newsletters from the classrooms, school newsletters with editorials written by the leadership team, and displays of documentation to make learning visible were ongoing strategies to keep parents informed. In 2006 a Parent Research Group was formed to listen to the parent voice to further involve parents in decision making within the school.

5.6 Practice Development Methodology

The practices within the school have developed as a result of action research methodology. Kemmis and Mc Taggart (1988) defined action research as "a form of collective self-reflective enquiry undertaken by participants in social situations in order to improve the rationality and justice of their own social or educational practices as well as the understanding of these practices and the situations in which these practices are carried out" (p. 5).

Action research has four basic characteristics as outlined by Burns (1998): it is situational; it is a collaboration between a team of researchers and practitioners working together; it is participatory with each participant involved directly with the research; and it is self evaluative, with the goal to improve practice.

Burns (1998, p. 347) outlines that social psychologist Kurt Lewin first used the term action research in his work concerning the after effects of World War II on society in the 1940s, challenging the concept of the researcher as the 'objective' observer of human activity. He promoted cooperative, community projects aimed at improvement. The approach does not isolate a single factor, rather the entire context is considered, modifications are immediately implemented and the process is cyclic and ongoing. Lewin's model involving a cyclic sequence of identification, therapeutic action and evaluation has seven sub-stages. Stage One involves identification of the problem or idea, perceived as critical in the context. Stage Two is an analysis of the situation to enable a full description of the context in which the problem or idea is situated. Stage Three is a review of research literature to learn from comparable studies. Hypotheses can be built based on knowledge gained in Stages Two and Three. Stage Four involves gathering information relevant to testing the hypotheses. In Stage Five research methods are selected and tasks allocated. Stage Six involves the implementation of the action plan. The final, seventh stage, is the interpretation of the data and the overall evaluation of the project. At this stage the cycle is most likely to begin again based on new questions or ideas, often stemming from the previous inquiry. This model of research has underpinned the research method at the school over the past ten years. This research study is the beginning of a new cycle based on new hypotheses which came out of previous cycles of practice reform. The researcher hypothesised that a teacher's ability to change and modify their practice was often based on the beliefs that underpinned their practice.

Burns (1998) states, "The role of the researcher is fundamentally changed in action research as compared to the classical role; in all participatory research, the researcher may adopt a completely new one" (p. 358). Burns sees the researcher as having several responsibilities including often being the initiator of the research, a mentor for the participants and a teacher training other participants to play their part.

5.7 Chapter Summary

This chapter has provided a review of the historical development of the education system leading to a review of the context for government schools in Victoria. This review of the context of schools has outlined the historical traditions, which still influence the education system within Australia. Several of these traditions including the discipline-based curriculum, and the single teacher and group arrangement, require examination as to their current relevance to society's needs and efforts must be made to examine alternative approaches. This study is underpinned by cultural historical theory and the belief that learning is a transformation through participation in social and cultural contexts. The data review has examined the context of transformation within the case study school, outlining the historical development and the cultural context of the participants and providing an overview of the *funds of knowledge* the participants bring to this study.

Chapter 6
Data Presentation: An Interpersonal View of a Community of Practice in Year Three

6.1 Introduction

The concept of a *Community of Practice* as theorised by Lave and Wenger (1991) and discussed in the literature review (Chapter 3.4), can be described as a group of people sharing a common interest, who through their interactions and active participation develop a shared practice of learning together. Through this iterative process, this community of practice continually improves their own practices.

The participants are transformed through this ongoing participation (Rogoff, 2003, see Section 2.4.1) in the cultural activity of schooling, where children engage in purposeful experiences with a more capable person, which in turn impacts on the practices of the cultural community. As described by Vygotsky (1978), the child develops in this community firstly through interactions between people or cultural tools (interpsychological functioning) and then inside the child (intrapsychological functioning) (see Section 2.3.1). This is enabled through the teacher's awareness of the concept of a *social situation for development* (Vygotsky 1998) (see Section 2.3.2) taking into account the unique relationship between reality and the child within each age period of development. Valuing the whole picture of the child's life, his (sic) social existence.

The aim of this chapter is to document and analyse the community of practice enacted in the Year Three learning community and the transformation (Rogoff 2003) of the participants and the institution through their participation in this cultural activity. Firstly, details of the setting

are provided. Using Rogoff's lenses of analysis (Rogoff 2003, see Section 2.4.2), an interpersonal lens analyses the relationships and interactions of the participants in the community. In the following chapter an institutional lens analyses the shared learning practices enacted through the development of participation structures (Rogoff, 2003, see Section 2.4.3). A personal lens portrays the participation of the individual regarding development, relevance and motivation.

The analysis of data responds to the following two research questions.

What are the pedagogical practices in play, in a contextual, participative, community model of pedagogical reform, enacted in a government primary school?

What are the learning theories which underpin this practice?

The analysis of the evidence demonstrates that the process of *transformation through participation* is a very rich experience for teachers, children and parents. The learning is a collaborative process with all voices valued and respected. The process of learning, and reflection on the learning, influence the participants' perceptions of their everyday lives, in turn influencing their present and future lives.

6.2 Setting

The setting is detailed here due to its difference to the traditional model of a classroom set up. The community comprised a full time teacher, two part time teachers who job shared, forty-eight children and their parents. Specialist staff, a physical education teacher, librarian, LOTE teacher and an ICT teacher provided sessions in their areas of speciality to the children in the

classroom program. An art educator and I (as the teaching and learning co-ordinator) attended planning sessions on a needs basis.

The community was housed in a three-roomed complex (Figure 6.1). The first room had a vinyl floor, bag storage area and a sink. The space comprised tables and chairs, which had flexible arrangements to accord with the activities, and an open floor space. The room was stocked with art, science and technology materials. A large class window provided a view into the adjoining second room. This room had an area with couches, an open carpeted floor space and an area with a large table and chairs. A shelving system housed books, writing materials, games, construction materials and paper storage. A wall of glass with large glass sliding doors and large glass windows on each side separated this room from the third room. This room had computers along the walls and an open carpeted floor space; tables and chairs were arranged in groups. The space also had a white board on castors and a large display wall.

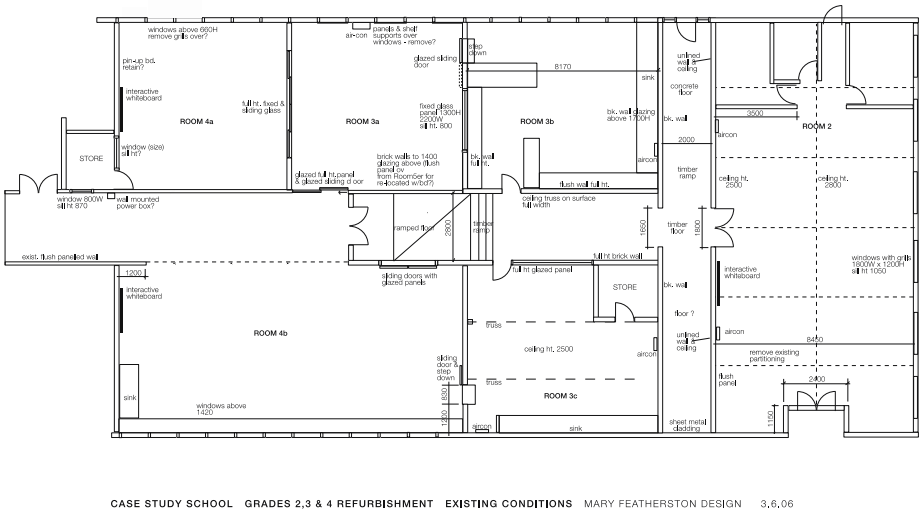

Figure 6.1. Year Three Complex Rooms 4a, 3a and 3b.

All the rooms were uncluttered and furnished with purposeful furnishings. Displays were particular to the learning purposes – for example, documentation of a research question '*What do we value?'* – and used to create a sense of ownership of the environment – for example self-portraits of the children.

6.3 An Interpersonal Lens Perspective

Learning viewed as an individual act residing in the mind of the individual contrasts with a cultural historical view of learning as a dynamic process, which is situationally based in a context where interactions occur with others and with cultural tools and processes. The purpose in this view is to engage in an authentic activity, which is collaboratively created in this context. The analysis of the data indicates that interpersonal relationships within this community formed a foundation for this process.

In analysing the data it was noted that relationships and interactions between the participants in the complex were of great importance to all. For instance, staff spoke about these relationships forming the basis of collaborative planning and development of the curriculum. A teacher described her motive for developing these relationships:

> Building a dynamic that exists in the context, in the relationship, of the learning space and I guess the relationship for me between the learners and the learners is just as important as the relationship between the teacher and the learners.
>
> (Interview /27.02.07/ Gemma / Teacher Year Three)

Participants of the study stated that they felt valued for what they contributed to the community; all parents interviewed saw this as an important reason to have their children at this particular school, as this example of a parent describing this context shows:

> My kids have been to two primary schools and one thing I learnt it was all teachers teach children (at the previous school). It wasn't that anyone really helped, but here everyone sort of helps each other (Parent: mm, mm) and everyone can be helpful you know…. that's the difference I've found. …What they learn here takes them through life.
>
> (Interview/19.04.07/ Parent)

I begin by exploring the relationships within the learning community between the students, teachers and parents. I then describe the transformation of the teachers, children and parents through this participation, as they engage in co-creation of the curriculum. I also trace teacher collaborative planning and reflection and the use of individual learning journey documents.

6.3.1 Relationships within the learning community.

Analysis of the data indicated that relationships formed the foundation for building the learning community. Integration of cognitive and affective processes in the brain is central to Vygotsky's definition of the social situation of development. The concept of '*pereizhivanie*' (Vygotsky, 1994 see Section 2.3.2), which means the emotional state in which cognitive and emotional processes are inseparable, is an important consideration in developing learning communities. This understanding supports the need for a learning community in which relationships enable all participants to feel confident and safe in their participation and interactions. It was noted in the analysis that the classroom was a dynamic environment with the complexity of the interactions building a supportive, engaging learning community. The data show that relationships existed in multiple interconnected forms within the cultural context. They comprised relationships between the children and the teachers, between the teachers as colleagues, among the children, and between the teachers and parents and the children and their parents.

6.3.1.1 Relationships between teachers and children.

Trust

I asked Anna and Sam, Can you think of any key elements of what you try to build within the relationship? A passionate dialogue ensued:

> Anna: Trust.
>
> Sam: Definitely trust.
>
> Anna: Definitely trust. Fairness.
>
> Sam: Respect.
>
> Anna: For them as well as for others.
>
> Sam: Yeah it's all of us. So when we say trust it's got to be both ways and when we say fairness it's got to be both ways.
>
> Anna: That level of responsibility, to, each other… as individuals as well as part of a group.
>
> Sam: If I had to narrow it down to one, that would be the one you know and I think trust because without trust you can't really establish any of the other, connections.
>
> (Interview / 7.03.07/ Anna and Sam/ Teachers Year Three)

The parents interviewed spoke about the building of a personal relationship between the teacher and the child as important for the child to be open about their thoughts and feelings, which is enabled through an environment built on trust and respect. A parent reflected on this concept in terms of his/her own school experience.

> The trust in the relationship. (Parent: mm) Where to query or whatever it is (Parent: yeah) they know they can, (Parent: yeah) confidently ask a question and know that they're going to be treated with respect (Parent: that's right) … when I was at school they use to tell you at the beginning of the year to ask questions but you ask one and you get put down … never bothered to ask them again.
>
> (Interview/19.04.07/ Parent)

The parents stated they wanted their child to be able to approach their teacher with confidence to discuss issues and their feelings.

> The teacher is their guide their educator of the day five days a week, so, it's I think it's important for that child to have, a good rapport a good relationship with their teacher because if there is a problem or there's a conflict, during the day they need to be comfortable within themselves to approach their teacher and say look this has happened or I need help with such and such so they need to be comfortable in a relationship with their teacher.
>
> (Interview/19.03.07/ Parent Four)

> I want that child to build up the relationship I want them to have the confidence with their teacher to say – I don't like the way this is happening or this is how I feel.
>
> (Interview/19.03.07/ Parent)

A parent recounted in an interview the experiences of her own child within the context of two school settings where in one case she had low self-esteem and the second where this had changed. The parent shared the child's thoughts on why this change had occurred:

> We moved to this school cause (child's name) was having some learning difficulties but, that didn't worry me as much as the self-esteem was diminishing. And you know in Grade Three she was sort of saying I'm not a very good learner and I thought – crikey you've got a long well hopefully, a long education, years ahead of you and you're feeling like you're not very good at learning, and yeah we've had a couple of years here … and she's totally changed ... you know something switched on in her

> head that said – I want this. I asked her what's the difference and she said I, something to the terms of, I feel safe here with you know you helping mum and, my teacher helping me ... I didn't feel safe or confident to ask the teacher for help in my other school.
>
> (Interview/19.03.07/ Parent)

This central principle of the unity of affect and intellect is evident above given by teachers and parents. It is clear in their emphasis on mutual trust and respect between children and teachers and in parents' desire for children to be able to confidently interact with their teachers. As the parent describes in the contrast between the two schools, when at the previous school the child had believed *'I'm not a very good learner'* (Interview/19.03.07/ Parent Four), while within the context of the case study school, the her belief in herself had changed, which she attributed to feeling *safe* with both her mother and her teacher helping her and confident to interact with her teacher, linking both attributes of *affect* and the *intellect*. This data also highlights the unity between the different components of the child's lives with the child seeing both her mother and teacher supporting her in her learning.

Fleer (2010, p. 110) quoted Kravtsov and Kravtsova (2009) as proposing that

> In pedagogical practice, the unity of affect and intellect could be a theoretical pivot, which permit the union of teaching and upbringing; the private life of the child and the organized activity; family and school. (Kravtsov and Kravtsova, 2009:205)

The union of teaching and upbringing and the unity of the private life of the child and the child's organised activities of family and school are highlighted throughout the data as an important aspect in the development of the child.

Reciprocal Roles

During the interviews each of the three teachers spoke of the reciprocal relationship between themselves and the children, where both can take on the role of teacher and learner.

> Anna: This is our label of teacher and with that comes those responsibilities of creating an environment that is conducive to a positive relationship this reciprocal relationship… where both take responsibility for learning that happens.
>
> Sam: The teacher the adult can obviously be the learner and the teacher and the child can also be the teacher and the learner so, I think the relationship is…. symbiotic …it goes back and forth.
>
> (Interview / 7.03.07/ Anna and Sam/ Teachers Year Three)
>
> Gemma: I also think that the role is between the teacher as learner and the learner as teacher too like there's a kind of a dual role.
>
> (Interview /27.02.07/ Gemma / Teacher Year Three)

This view of a reciprocal relationship between the teacher and learner with each taking on the roles in different circumstances is in contrast to a traditional teacher dominated program with the teacher planning and implementing the curriculum for the children. This process enables the child to be an active participant in their learning, bringing their prior knowledge and experiences into play in an ongoing process, in turn leading to new learning and development. The child interacts with the adults in meaningful contexts with each participant positioning (Kravtsova, 2008b) themselves within the interactions at different positions both above and below each other.

The teachers interviewed together also discussed the various aspects to the roles they played in their interactions with the children.

> Anna: I think that education, the system is so different from when I was going to school that, you know that the teacher was always the knowledge holder … have the authority and the power. And that's what I struggle with still now you know the balance between me being the teacher and me letting go and trusting that the children will engage at their point of need or level or interest … every year I see the relationship shift and change depending upon my experience, and on the vibe the emotional attachment I have with the group of mine.
>
> Sam: Yeah 'cause certainly when you develop that relationship, if you develop a positive relationship those roles are more fluid aren't they.
>
> (Interview/ 7.03.07/ Anna and Sam/ Teachers Year Three)

These thoughts reflect the *balancing* and *fluid* aspects of the teachers' role as discussed by Siraj-Blatchford, (2007, see Section 2.4.5) in the concept of the 'mediating role' of the teacher, generated through 'shared sustained conversations' with children. Siraj- Blatchford (2009) describes the teacher-child interjection, which guides but does not dominate children's thinking. This is described by Anna above as providing an environment where*, "the children will, engage at their point of need or level or interest".* This new perception of the role of the teacher again contrasts with the dominant traditional perspective, in that in the former teachers need to continually reflect on their interactions with the children and the children's participation in the experiences provided.

Analysis of the interview data outlined above indicated that the concept of a trusting and respectful relationship between the teacher and children was viewed as a foundation for a positive, productive learning environment. Teachers, parents and children espoused this view. Analysis also indicated that both teachers and children take on the reciprocal roles of teachers and learners within this learning environment. This perspective – in particular valuing the

active participation and voice of the children and the ongoing role of the teacher as a learner within this learning community – changes dramatically the dialectic of the cultural activity. These aspects of trust and reciprocal roles enabled the unity of *affect and intellect*. This in turn enabled what is discussed in future sections, the occurrence of *obshchenie* (Kravtsova, 2008a, see Chapter 3.5.5), the dialectical process of development and learning, enabled in this community through collaboratively developing the pedagogy.

6.3.1.2 Relationships between colleagues.

Analysis of meeting documentation indicated that ongoing dialogue and rigorous debate were a feature of the team of teachers working together. This occurred at a planning session timetabled each week, after-school reflection meetings, out-of-school-hours meetings, and in conversations over the phone and via email. At the beginning of the year the teachers met to discuss their working together as a team. They discussed in depth topics such as:

> What are our individual professional goals and how can we support one another in achieving them?
>
> Are we using our strengths effectively?
>
> What are our priorities?
>
> *What's achievable*?
>
> (Document/ 03.06/Year Three planning minutes)

They discussed the need to develop a structure within the team with defined roles consistent with approaches used across the school, and they worked together to define the roles and ensure shared understandings of the terminology.

Role	Definition
Implementers of workshops and target teaching	(The teachers are in agreement that shared understandings of these roles exist.) Planning sessions to unpack children's beliefs and theories, provoke children's thinking, develop needed skills
Project coordinators	Collects and collates data Maintains visual timelines of project incorporating data Maintains narrative of project development Supports implementers with session organisation Maintains weekly/ daily timetables
Documenters	Project development Newsletter Portfolios Displays
Formal assessment	Do we still pursue them? If so which ones?
Secretary	Admin Classroom supplies Photocopying Daily/weekly timetables
Other roles and responsibilities	???? (Indicating the discussion needs to be ongoing.)

(Document/ 03.06/Year Three planning minutes)

The data from interviews and documents, such as the minutes shown above, demonstrate that the collaborative relationship between the teachers is a dynamic which provokes discussion and debate about student learning and wellbeing, shares responsibility and expertise and provides a model of collaborative learning to the children. This dynamic is further examined in each of the following sections as I unpack the pedagogy enacted in the learning community.

6.3.1.3 Relationships between children.

As the documents and interview transcripts were examined, it became evident that children's collaboration was an ongoing goal of all teachers. The data show that discussions were a major feature of building this collaboration, with listening to varying viewpoints leading to the development of shared understandings. The data showed that conversations took place throughout the year (see evidence in the following section) where the children's thoughts, perspectives and current understandings were documented and used to inform future planning. It was noted that this aspect to planning was a key dynamic of the learning environment. Fleer (2010, p.16) describes this process as the "relations between the mediating role of the teacher and the child's lived social world" (see Section 2.4.5). It is a process that values the prior knowledge of the children and the children's endeavour to interpret the topic under discussion in relation to their current conceptual development of their world. Teachers use their interpretation of the children's perspectives to inform future planning. Fleer (2010, p. 15) states that teachers promote a "*conceptual and a contextual intersubjectivity* between the children and the teacher" (see Section 2.4.5) with this movement between these two elements at the centre of the *conceptual framing* of the interactions between teacher and child.

Discussions with the children took various forms. The children initiated some agendas (e.g., the friendship issue in the playground), and others started with focus questions developed by the teachers (e.g., *How do the choices you make control your lives?*), children's ideas or stimulus material (e.g. Being Me Video).

An example of such a conversation is a community meeting. At this community meeting issues were raised by the students about their community. The issues included: people causing trouble for others, people getting into trouble for something they didn't do, teasing, friendship

issues, not caring for our environment, not taking responsibility or taking turns appropriately. The children came up with possible solutions to the problems.

What are we going to do about it?

a. Be honest, own up
b. Ask people to do things politely
c. If someone is doing the wrong thing tell the teacher
d. Be fair
e. Just Do It
    a. Do whatever you have to do
    b. Take responsibility for yourself
    c. You fix it
f. No blaming
g. 5 finger strategy (ignore, say stop, say STOP louder, move away, tell teacher)
h. Honesty and responsibility gets a warning not punishment
i. Line monitor to record names

(Document/ 16.02.06/ documentation)

This conversation led to the development of strategies that were enacted and reflected upon throughout the year. The final presentation of the collaborative research returned to these ideas regarding issues within student's interactions.

The parents interviewed discussed the early importance placed on developing the collaborative learning process with the children and how this approach engaged the children in their learning.

> Parent: The philosophy of the school is to care for the others (Parent's: yeah) (Parent One: teamwork) I'm not quite sure of the exact wording but I've picked up on that.
>
> Parent 1: They work in groups (Parent -yeah) then the team work the collaboration is there in their, (Parent: mm) in their group, they are encouraged right from the start, (Parent: yeah the value that they place on it) … (Collaborative teams) shows you what you could do, you could ah get the child to be interested in all different types of things, studies and all that (Parent: mm) to teach that base, (Parent: yes) right at the start if you can, find a way of getting everyone every child interested (Parent: yes) in that ah, that collaborative process, (Parent: yeah and I mean) then you're into it.
>
> (Interview/19.04.07/ Parent)

The parents noted the importance placed upon collaboration and children working together and that this could have multiple outcomes including children supporting each other and the children exploring shared interests.

The parents interviewed talked about the emphasis in the school on the interpersonal skills of the children and the collaborative working skills, and how these skills transferred to the children's personal interactions with each other within the school.

> The role of the child is really, it's the collaboration between the teacher the child and the parent, and what I like about (the school) is I think the amount of time they put into the interpersonal skills, feeling good about something, caring about others (Parent: that's right) working a problem out with others I know that in, Grade Four my daughter had problems with friends and she had that in her other school but what I noticed that was different was, the rest of the children said well I'm not really happy with how the situation's going because it's not respectful enough. So the teachers the children themselves were working through this problem; it didn't, it doesn't you know at this school, mean that you don't have those same problems, but I like the openness that, (Parent's: mm) that they can discuss it and the value that they pay, that they put on those interpersonal skills and I think if you feel good about yourself, you know

> everything else is going to fall into place to a certain extent.
>
> (Interview/19.04.07/ Parent).

The parents noted that the emphasis on working collaboratively develops the children's interpersonal skills, which also has an impact on their ability to resolve interaction problems, leading to children's positive perspectives of themselves.

The data consistently demonstrate the collaboration of children, and shows how their active participation and interactions with each other provoked learning and developed important learning strategies leading to development. The *mediating role* of the teacher linked the learning to the child's social lives, enabling a *conceptual and contextual intersubjectivity* to occur, fostering opportunities for *obshchenie* (the relationship between learning and development).

6.3.1.4 Relationships with parents.

The teachers met early in the year with the parents to establish a partnership. The data from interviews and documents demonstrated that the teachers had worked throughout the year to build on this partnership using techniques that were both formal and informal. A teacher talked of her struggle to achieve the desired outcomes in this process.

> It's probably again an ideal versus practical role and that's something I've really struggled with at school because, I would really like for the parents at our school to be central community members and I think we struggle to make that happen, to envision that.
>
> There's a formal and informal structure. So we've got the formal structures of the classroom, newsletters, parent information nights, parent teacher interviews, school events, the assemblies, and the school wide newsletter. Then at an informal level I guess and that's probably what I'm most dissatisfied with.

> Optimally they would be – I guess then there's the kind of being involved in the child's schooling life too but I think I guess I'm coming to terms with the fact that we probably need to find other ways to make that work as parents are less and less available for being involved in schooling we need to find ways to, collaborate to share the joys and the struggles
>
> (Interview/ 27.02.07/ Gemma/ Teacher Year Three).

An analysis of the fortnightly classroom newsletters and daily communication diaries indicated that they were a means of making links between school and home. The newsletter provoked conversations in the home about what was being discussed at school and the diary was one means of bringing in information or news from home to share in the classroom, as is shown in the example below:

> We've tried to build in a fortnightly – hopefully – classroom newsletter which actually is trying to provide the parents both with, with practical things that they need to know so like when things are happening and that kind of thing but also trying to give them a little bit of insight into the journey of what's going on in the class by putting in some of the pedagogical discussions or the discoveries of the children or of some of the photographs or some of their writing or those kind of things and then inviting the parents to become involved
>
> (Interview/27.02.07/ Gemma/ Teacher Year Three)

The following two extracts show how staff shared with the parents the learning experiences that were taking place in the complex. The first extract shows the teachers demonstrating their accountability to meet government curriculum requirements and learning terminology familiar to the parents. The second extract reflects the deep listening to the children's perspectives and the goal of deep learning.

> Grade 3 Learning Community: The Pulse Newsletter article

Term 1 Issue 2

Healthy Lifestyles Food and Fitness

Yep, we're focussing on healthy food and fitness.

This falls into (School Name) big idea area of: Identity

The curriculum areas include:

- Health & PE
- Maths – Measurement & Data, Number
- English – Reading and Writing
- Science– Energy Transformations/ Living Things/Experimentation

We are investigating/exploring healthy lifestyles: Daily fitness at school.

Learning agreement activities:

"Sports pass" investigations during learning agreements.

Human Skeleton investigations & constructions

Growing herbs & vegetables

What's in your lunchbox? – Investigating and talking about foods – what are the ingredients in different pre-packaged foods brought to school – what is the balance?

Junk Food Free Fridays – focussing on eating "healthy foods" – Is there such thing as "junk food"? (More on this at the afternoon tea) – If you can send in some fruit/vegetables to share on a Friday that would be great.

Home learning – Data collection – Lifestyle Log/ Food diary

Analysis and comparison of data.

Communication – What is health?

Since the beginning of term one the Grade 3's have been developing a project surrounding identity. So far this has included gathering information and learning about our physical bodies and our individual lifestyles. We will continue gathering information about ourselves by looking at the relationships and artefacts that are meaningful and important to us and that make us who we are. At this age level, students are beginning to look outside themselves and are recognizing how they are impacted by external situations, events and people. In response to this developmental stage, we also intend to explore how our identities are influenced by the media in its many forms. Through this project we are hoping to develop the children's sense of self and empower them to make informed choices and decisions that affect their overall wellbeing. Some of the ways that we will be investigating these concepts are through personal collages, portraits of self and others, exploring various forms of human communication including body language and facial expression, and deconstructing music and movies. We anticipate this project to culminate with an exhibit highlighting the many facets of childhood. We are all very excited about this project and the potential that it offers. We hope it sounds exciting to you as well!

(Document/ 03/06 / Newsletter)

In the next extract, it can be seen that the parent describes that each perspective is valued, the parent and the child are both seen as teachers and have an active voice. It also shows how the open relationship between the teacher the child and the parent builds confidence in each to actively participate in the process of developing the curriculum and the learning environment. This finding was consistently featured in the parent meetings.

> Seeing the child inside, seeing the teacher inside us, getting the teacher to draw from the children the ideas that they have and I know the response from the teacher because they have established that relationship, well yes I do have the confidence and yes I do want to investigate this, and then acknowledge, they have a voice. I think that's a huge thing with the children here at this school yes well yes I am allowed to have a say even though it might be ridiculous but this is what I'm thinking at the moment, and that's okay and the teacher acknowledging well yep that's okay has somebody else got an idea. (Parent: mm)
>
> (Interview/19.03.07/ Parent)

In the example above, we note that the relationships between the teacher, child and parent are an interwoven dynamic with each contributing to, developing and learning from the interactions. The dialectical relationship between the teachers, children and their parents is a crucial aspect to support. This enables a process that Fleer (2010, p.198) describes as conceptualising development, learning and pedagogy together. The reciprocal, symbiotic relationship between the child, the teachers and their parents enables *obshchenie* to occur. Fleers emphasises "the importance of Vygotsky's conception of a single process of self-development, where one stitch (concept) in the fabric (conceptual system) can only ever be understood within the context of the whole tapestry which represents the child's life" (p. 198), stating that this highlights the importance of these relationships within the child's learning and development.

In the next section I examine how the collaborative participation enables this development process to occur.

The following section documents the evidence of the participants collaboratively developing a learning community, putting into place a practice to implement a relevant, contextual and

purposeful program. The process was continually reflected upon and documented to inform future practice and experiences.

Figure 6.2 below models how a context was developed where the relational contexts between teachers, children and parents enabled the *Cultural Historical* contexts and the *Funds of Knowledge* of the community to be engaged. The data consistently revealed that relationships were developed in an environment involving reciprocal roles, enabling dynamic participation, a dialectic involving active listening and a culture of trust and respect.

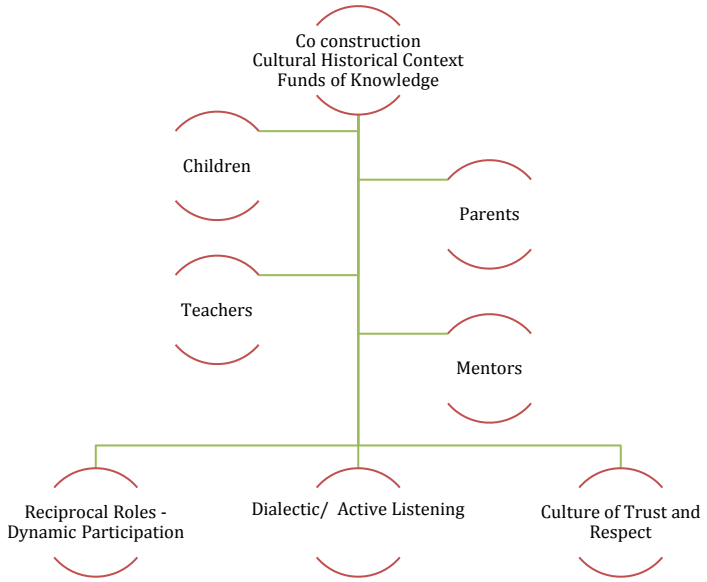

Figure 6.2. Interpersonal relationships

The analysis of documents revealed that a team of teachers, children and parents worked collaboratively throughout the year in a dialectical relationship to build a learning community. Learning in such a community requires programs that facilitate children's engagement with and connectedness to their learning, according to Wardekker et al. (2012), who work and

research in the Developmental Schools of the Netherlands (see Section 3.5.6). These researchers state that

> Learning needs to be organised in such a way that students can relate educational content to their own past, present and imagined future, and are stimulated to do so. The concept of Communities of Learners, interpreted within a cultural-historical perspective, represents a possible form of this. (Wardekker et al., 2012, p. 166)

The case analysis in this study explored the children's connection to the learning and their responsibility for their own.

Analysis of the data found teachers held in depth discussions as a team together and also with the group of students to establish purposeful, meaningful programs of learning, also seeking contributions and feedback from parents. Teachers provided experiences to build on the current understandings of the children. Teachers documented the journey in great detail, and used this documentation to determine future directions, which were explored through the inquiry research. This process is discussed further in Chapter Nine. Table 6.1 summarises the collaborative participation of teachers, children and parents.

Table 6.1

Summary of Collaborative Participation

Summary of Collaborative Participation	Description of Participation	Examples from data
Teachers' collaborative participation		
Planning to: Determine current children's understandings Provoking broader thinking Provoking new understandings Provoking deeper thinking Provoking a change in behaviour	Leading discussions Providing experiences Collaborative investigations Questioning Real life context	Identity discussion 28.02.06 conversation/document Excursion to 'Earth from Above' exhibition Installation How do the choices you make control your lives? 29.03.06 conversation/document Water Watch- stencilling litter prevention stencils
Teacher reflection on practice	Discussion	Documentation 7.03.06 meeting minutes/document
Children's collaborative participation		
Community meeting Learning Agreement Dialogue	Discussion Shared experiences Conversations	16.02.06 Document/ Teacher Documentation 16.02.06 Document/Teacher Documentation 27.07.06 Document/ Teachers Documentation
Teachers' and Children's collaborative participation		
Questioning - listening – reflection – response Making learning visible	Interviews Projects	How have I tried to make a difference? 23.04.06/Document Identity Films
Teachers', Children's & Parents' collaborative participation		
Newsletters Portfolios Meetings Classroom participation Student led conference Celebration of learning	Provoke conversations at home Documentation of learning Discussion of learning Excursions Sharing of child's learning Sharing of community learning	Fortnightly classroom newsletter and school newsletter Individual portfolio Year Prep-Six Teacher / parent meetings Art from Above Exhibition Mid-year and end of year conference Arts Festival

In discussing Kravtsova's (2008b see Section 2.3.6) theory of the zone of potential development Fleer (2010) states, "this zone represents the social and cultural world of the child that lies within the sphere of possible engagement". (Fleer, 2010, pp. 2–10). The above experiences each provide opportunities for children to have experiences within this zone of potential development, leading to experiences within the zone of proximal development and in turn actual development. In planning these experiences the teachers have a clear conceptual view of the type of thinking being promoted and this is important for how *shared sustained conversations* may evolve between a child and a teacher also taking into account the children's everyday knowledge and experiences. Fleer (2010) discusses the process as *conceptual framing* (see Section 2.4.5), which is relevant to the enactment of the teacher's role.

> Here the teacher keeps in mind the core concepts (scientific concepts) whilst ascertaining the child's everyday concepts in relation to the intellectual area being considered. Because the teacher wishes to transform the child's everyday practice through being conscious of the particular concepts being explored, it becomes important to consider how the scientific concepts may relate to the child. Determining both contexts and the thinking of the child in relation to the concept being explored is critical. Here a conceptual intersubjectivity is created. That is, the teacher can only enter into the child's conceptual world if she/he finds out the child's everyday concepts and contexts that are meaningful for the child. Having both the everyday concept and the scientific concepts in mind allow for the generation of educational activity that frames the child's thinking. (Fleer, 2010, p. 95)

The aim of each of the above experiences as outlined in the table is to frame the children's thinking in relation to the dialectic between the child's scientific and everyday knowledge, taking children's empirical and narrative knowledge to theoretical understandings. I explore this in the following section.

6.3.2 Co-creation of curriculum.

Evidence of valuing of the child and their family's story provides the possibility of a *double move* (see Section 3.5.7) between their everyday lives and the development of scientific thinking. Hedegaard (2002) has suggested that teachers need "to acknowledge the student's personal everyday cognition" (p. 23) and to use these funds of knowledge to develop further learning. The teachers are required "to create learning activities that connect subject-matter knowledge with students' personal everyday cognition" (Hedegaard, 2002, p. 23). Vygotsky (1987a) argued that when new concepts are introduced to children out of a relevant context, they are disembedded and hold little meaning for children. The co-creation of the curriculum as revealed in this section constantly considered the connection of the learning to the lives of the children. Vygotsky (1987a) argued that everyday concepts and scientific concepts (see Chapter 2.3.3.) should be thought of as being dialectically related to each other. He stated:

> Scientific concepts have a different relationship to the child's personal experience than spontaneous concepts. In school instruction, concepts emerge and develop along an entirely different path than they do in the child's personal experiences. The internal motive that moves the child forward in the formation of scientific concepts is completely different than those that direct his [sic] thought in the formation of spontaneous concepts. When concepts are acquired in school, the child's thought is presented with different tasks than when his thought is left to itself. In sum, scientific concepts differ from spontaneous concepts in that they have a different relationship to the child's experience, in that they have a different relationship to the object that they represent, and in that they follow a different path from birth to final formation. (Vygotsky, 1987a, p. 178)

The projects outlined in this section demonstrate the alignment of the children's scientific thinking development and the influence of this in their everyday lives. Fleer 2010 states, "a deeper theoretical understanding of concept formation is needed to fully appreciate how the

social process of teaching turns everyday practices into the conscious realization of concepts which children use to transform their everyday lives*"* (p. 8). As noted in the literature review (see Section 3.5.7), empirical knowledge is foundational to discipline knowledge and narrative knowledge locates everyday conceptual conversations within the everyday practices of children and their families. The teachers continually tried to move beyond an exclusive use of empirical knowledge and paradigmatic thinking with a focus on categorising learning. They worked towards developing theoretical knowledge with a focus on logical reasoning and concept formation, in turn seeking to deepen the narrative knowledge located within everyday experiences and practices.

Fleer (2010) explains:

> Hedegaard (2002) states that theoretical knowledge and thinking methods use both empirical and paradigmatic thinking with narrative knowledge and methods to help children bring together their own personal knowledge with abstract knowledge. It is through the appropriation and transformation of subject-matter knowledge that children develop personal cognition. (p. 56)

The social experiences outlined in the Table 6.2 enable the development of theoretical knowledge which enables the development for children of symbolic tools "that they can use to analyse and understand the complex and changing world" (Hedegaard, 2002, p. 36) in which the children are interacting and living their social existence.

In examining the school documents for approaches to curriculum implementation, it is evident that a key feature is how the school foregrounds the school inquiry research, apparent within the clear guidelines. Table 6.2 gives a summary of the key aspects of the process.

Table 6.2

Inquiry Research Outline

Inquiry Research	
Big Idea	Selection of a 'Big Idea' to explore. Big Ideas were developed through teacher discussion. (Sustainability, Identity, Interdependence)
Connecting areas of interest	Big Idea is explored through researching the interests of the children.
Concept and skill development	Teachers document the possible concepts and skill development in the research.
Prior knowledge and pre-existing understandings	Teachers determine the current understandings of the children.
Immersion	The community provides a variety of experiences to build on the children's understanding and explores possibilities for research.
Research Focus / Question	A research focus or question is collaboratively determined.
Research	Research process is completed.
Making the learning visible	The learning is made visible, possible through a variety of mediums.
Authentic audience	The learning is shared in an authentic context.

This process achieves the goal of children learning concepts in a relational process. As Fleer (2010) states, "Children do not do 'mini lessons' about concepts within discipline knowledge…Learning experiences began with the 'whole' and through this, the children examined concepts in a relational way" (p. 60). This process values the children's everyday knowledge, and moves learning beyond empirical knowledge to theoretical knowledge, in turn deepening their narrative knowledge.

The process began with the selection of one or a combination of the big ideas for curriculum development from a school document (Appendix Two). The big ideas were determined through a teacher research project in 2005, *Identity, Interdependence and Sustainability*. The big ideas relate to key concepts of importance to the cultural historical context of the

community. Through exploration of these big ideas the children "increasingly enter into connection with historically established human experience, and come to know objective reality with breadth and depth" (Leontiev and Luria p.47, cited in Fleer 2012, p. 90). The children can then come to understanding of and engagement with these concepts through the inquiry process, enabling the achievement of the objective that the child can positively and actively participate in this community, developing it for future generations. As part of the theory and practices of the Developmental Schools Netherlands (see Section 3.5.6) Wardekker, Boersma, Dam and Volman (2012) state:

> The dynamic between motives and practices is especially important in relation to the stated aim of education as endowing students with *agency* in cultural practices (van Oers, 2010). Agency implies being aware of your own position, role and competencies, and being aware also that you can change these. (p.166)

The big ideas were explored through various interests or questions as noted during staff interviews.

> Anna: Curiosity wonder, based on…our big ideas at this school. I think as a staff we've unpacked it to our ability…. it was encouraging how the staff responded in that they knew that these were the big ideas yes but there were a myriad of vehicles to get to, for children to have those understandings.
>
> (Interview/ 7.03.07/ Anna and Sam/ Teachers Year Three)

A relevant concept or topic was selected which had meaning and relevance to the children, and which the teachers saw a purpose in exploring, given their understanding of the learning community. This approach is supported by Hedegaard's (2002) recommendation in regard to children's learning motives discussed in the theoretical framework chapter (see Section 2.3.5), which holds that school age children should be given "tasks that motivate them to research

activity so that a relation between the pupils' own problems and the problems of the subject area is created" (p. 21). Hedegaard (2002) makes this need clear within the school context when she states that

> The learning motive thereby can become connected to subject-matter concepts, and on the other hand subject-matter concepts become the basis for the child's development of a reflected and theoretical orientation to the world. The learning motive develops from the child's participation in teaching activity, but the interest the children bring to this teaching has to be a starting point for their development of motivation. (p. 21)

The teachers discussed this in the interview:

> Sam: I think to me inquiry is, somehow identifying an area of interest for the students that can be the catalyst for the learning that you want to achieve.
>
> Anna: Finding out their feelings their questions about it.
>
> (Interview/ 7.03.07/ Anna and Sam/ Teachers Year Three)

The teachers determined skills and concepts that could also be developed through the exploration of the project.

> Sam: Yeah so identifying, an area of study that, ultimately comes from the students, but that's the catalyst for the learning and you I think the teacher have to identify what learning needs to be achieved through that study.
>
> Anna: Understanding the skills involved, which inevitably have all your literacy covered all the mathematics covered.
>
> (Interview/ 7.03.07/ Anna and Sam/ Teachers Year Three)

The interviews show that children, parents and teachers provided experiences to explore the concept, looking for possibilities for future research. A research question was determined by the community and then explored. A means to make the learning visible was determined and an authentic audience to share the research was decided on.

> Sam: You know identify the areas of study and then the teacher decides what learning they would like to achieve through that area of study but, the area of study it comes from the kid so that they're interested in and they're excited about learning about it and then you go through the process of finding out what they want to know, and then researching it and going out and finding out about it in, any number of ways, you know, through technology and through other people, through excursions, the immersion process, and then being able to take that information and that learning and do something with it and then reflect about it and use it.
>
> Anna: Future learning. Past learning to present experience.
>
> (Interview/ 7.03.07/ Anna and Sam/ Teachers Year Three)

Analysis of the data found that concepts and related projects, which had been explored at various year levels, were documented on a spreadsheet, which was updated yearly (Appendix Two). As was shown above, the process of finding a means to investigate the big idea was a collaborative process; the selection of this was done through the processes of unpacking children's current theories on the concept and examining their prior knowledge and existing understandings. This was often done through questioning and listening as discussed below. Throughout the year two projects were developed and explored by the community. I now trace the inquiry process that took place to explore the methodology and outcomes of the process.

6.3.2.1 Prior knowledge/ pre existing understandings.

Document analysis revealed the details of the process used by the school to explore the big ideas as developed by the community. It was evident that the teachers selected the big idea of 'Identity' to explore at the beginning the year and the exploration of this concept lead to the investigation of the big idea of Sustainability in the second half of the year. Analysis shows that the teachers began each study by determining the children's prior knowledge and their pre-existing understandings of the concept, developing a connection to the children's everyday lives and existing conceptual perspectives. This process is aligned to the cultural historical theory of concept formation discussed in Section 2.3.3. Vygotsky (1987a) has shown the role of the teacher is to support concept formation through connecting subject matter with the children's everyday cognition.

> He has a concept of the object and is consciously aware of the object that is represented in the concept. He is not however, consciously aware of the concept itself. He does not have conscious awareness of the act of thought that allows him to represent the object. (p. 217)

The goal of the teachers was to make the children consciously aware of the concepts of *sustainability* and *identities,* influencing the child's own person and their interaction in society.

It was noted in the analysis that initially the students were informed that they would be discussing 'identity'. It was suggested that they investigate the meaning of identity over the weekend by asking their families or just thinking about it themselves. The teachers introduced the discussion by asking if the students had heard the word 'identity' before and if so, in what

context. Analysis of the data found the discussion varied bringing in many perspectives. The following are some examples of the breadth of discussion.

The discussion explored the identities of super heroes and movie characters.

> (The other students started to identify other super heroes with hidden or dual identities).
>
> M: Have you ever seen the big green man?
>
> Teacher: Do you mean 'the Hulk'?
>
> M: Yes, the Hulk. He changes too.
>
> L: Spiderman is like that; he is a super hero and a normal man too.
>
> M: Do you know the man with the gun who stands like this?
>
> (Demonstrating a stance)
>
> Teacher: Do you mean James Bond?
>
> M: Yes, James Bond. He has special powers.

(Document/ 28.02.06/ documentation)

The television program CSI was discussed which led to a discussion of determining identity through evidence.

> S: Sometimes when I watch CSI they use equipment and things to get hand- prints to identify the bad guy.
>
> Teacher: Why do they get the handprint?

S: Because it tells them who the person is.

(A brief discussion about how detectives can find people using a handprint developed).

Teacher: A handprint has information about each person that is specific only to them. Do you know of any other body information that is specific to you?

T: Footprints.

L: Hair.

A: Skin.

L: Blood.

(A brief discussion about body information developed but no one said DNA, teeth, iris).

Z: Identity is what makes you who you are.

R: It's what makes you.

(Document/ 28.02.06 / documentation)

Identity related to personal interactions with people.

B: I think identity is when you know someone from a long, long time ago and then you see them and they say, 'Hi I know you'. When you saw their face, recognise the identity of them… (Document/ 02.03.06 /documentation)

Identity related to contemporary music.

J: I heard it on Delta Goodrem's song, 'Mistaken Identity'.

(Document/ 02.03.06 /documentation)

This documentation was taken back to the planning session. The children demonstrated that their perceptions of 'Identity' were related to their everyday experiences with media through super heroes, CSI and song lyrics as well as personal interactions with people. The teachers established a link between the children's everyday lives and the concept to be explored, enabling development beyond narrative knowledge to theoretical knowledge. The learning was happening in a meaningful context, setting the scene for the development of theoretical thought. Fleer cites Davydov (1990) who states "there are conditions for the activity of theoretical thought, one of which is the wholeness of the object under investigation, for a universal connection to be established, the learning context must work with the wholeness of the object, and the interferences of its elements" (Fleer, 2010, p. 62). The approach used in this study is thus supported by (and in turn supports) the cultural historical theory of conceptual formation as discussed in Section 2.3.3 and also described in the radical Local Teaching and Learning Approach (see Section 3.5.7).

Analysis of the data noted the process involved in developing the second big idea explored during the year, *sustainability*. This concept was introduced with the teachers talking to the children about their observation that environment had attracted the fewest responses on the values display developed earlier in the year. This realisation provoked a conversation in class:

> **Teacher:** We are ready to start our new classroom project and we (classroom teachers) wanted to discuss with you (students) what the project should be. The three of us were looking at the values you put up on the wall (referenced values circles) and we saw that the environment circle had the fewest responses in it. What do you think that might be telling us?
>
> **L:** That people don't care about it. Or maybe they don't know about it.

N: That we don't value it (the environment).

Teacher: Why do you think learning about the environment is important?

N: The environment affects your mood and helps us to live.

(Document/ 27.07.06/ documentation)

The discussion led to possible areas for investigation: water cycle and water management, the impact of animals on the environment, recycling processes, indigenous methods for accessing environmental resources, population sustainability, humans as part of the animal kingdom. A conversation with a second group of children discussed trees and oxygen, animals, composting, movement of the earth and the solar system. Analysis of the evidence found the community had begun to explore the concept by taking their everyday knowledge about sustainability and discussing the low importance placed upon the value the children hold for this concept within their world. This discussion sought to extend that knowledge through the discussion of possible empirical knowledge areas of research. Empirical knowledge is generated through paradigmatic thinking where theories must be tested and verified. Several questions were asked by the children, which led to a 'wonder wall' being created in the classroom. What the children wondered about included "What killed the dinosaurs? How did we become human beings? How does the moon shine in Macedonia and then shine here?" This process of discussion and question generation reflects how the leading activity of the children in this particular age period was part of the social situation of development; it was a process of questioning and determining their reality of the world. This process is discussed in a later section on personal learning.

Children related information about the environment to their own cultural experiences, and in doing so made connections to their everyday knowledge that in this instance reflected the multicultural characteristic of the community.

A: In Samoa they make pencils out of sticks.

Teacher: How do they do that A?

A: I'm not sure. Ask M because they do it where he's from too.

W: Yeah, they do. They do it in New Zealand too.

M: Yes they do, but I don't know how.

A: In Samoa we use leaves to make fans.

(Document/ 27.07.06 /documentation)

Through discussion, the children also developed hypotheses about their ideas about the world. This discussion also highlighted that the children felt secure to express ideas within this forum of a community of learners, reflecting the respectful relationships discussed in the previous section.

T: I think this is true but I'm not sure. The sea makes the sky blue; the sun reflects on the water and shines onto the sky.

D: How does that make the sky blue?

S: T, what about night time, the sky is dark?

T: The sun can't reflect at night.

S: The moon reflects on the water.

S: If it there was no sea it couldn't rain (proceeds to explain water cycle; T joined in).

T: I know how the sky changes colour. When the sun and moon swap they pass each other and change colours; then it reflects on the water.

J: How come the clouds are white then?

S: How does the moon shine in Macedonia and then shine here?

(Document/ 27.07.06/ documentation)

As evidenced above, the process of exploring the children's prior knowledge and their pre-existing understandings of the concepts informed the teacher planning. The process supported the connectedness of the children to the research project. This process demonstrates Hedegaard's (2002) point about connecting subject matter with children's everyday cognition. These discussions helped develop a relation between the pupils' own problems and the problems of the subject area and connected the learning motive and children's ideas to subject-matter concepts in both the areas of 'Identity' and 'Sustainability'. Here the shared goal is that the subject-matter concepts become the basis for the child development of a reflected and theoretical orientation to the world, with the interest the children bring to this teaching as a starting point for their development of motivation in the subject matter. This process aligns to Radical Local Teaching and Learning (Section 3.5.7). As Fleer (2010) states,

> Vygotsky points out how important it is for the teacher to make conscious to children scientific concepts, but not as disembedded concepts removed from the child's world. But rather as a process of bringing new insights into the objects the child is interacting with or the everyday activities that are being enacted through play within play programs or **development of curriculum programs.** (p. 31, bolding added)

6.3.2.2 Teachers' collaborative planning.

The following meeting minutes are indicative of the teachers' weekly meetings where they reflected on their practice, hypothesised current student understandings and planned collaboratively. The documents below show that the process built on the children's current understandings and provoked new learning for both the teachers and the children. This process demonstrates the mediating role of the teacher between the children's everyday concepts and the development of scientific understandings.

In one such session the teachers reflected on their planning and the data from the students they had collected thus far in reference to the big idea of *Identity.* They asked themselves:

> What is the data?
>
> Why did we do it?
>
> What were our intentions?
>
> How have we used the data to influence our direction?
>
> Is the data still useful /relevant?

How will the data influence our direction now?

How will we use the data now?

Through this process they arrived at the following statement:

> What we identified about the grade through the choices we made: The group as a whole exhibits the need to develop their understandings of **self** and how **I** impact the world around me. We observed that the children were fearful of taking risks with their

> learning that they preferred to give up their power by allowing others to make appropriate learning choices for them…
>
> (Document/ 7.03.06/ meeting minutes)

The team of teachers used their initial observations to inform the understandings and skills they aimed to develop though an inquiry based research project that would take the children's thinking to a theoretical level with the goal of influencing their everyday lives. They proposed the research question 'How do we develop our identity?' Firstly they looked at the question 'Who am I?' They discussed how this question is influenced by: the communities we belong to; who 'I' want to be now and in the future – what's possible/probable; emotional intelligence; self-awareness and the ability to identify one's own emotions; and the idea that individuals have the power to control their responses. They decided on experiences that would provide a range of skills to deal with emotions and responses to others. Secondly they discussed the need to recognise that others are different and the need to be tolerant towards others. They identified experiences that would analyse stereotypes projected by the media, and help develop an awareness in children of how their family and culture influence their impressions and perceptions, as well as experiences that would help children understand the importance of the acceptance of others and ourselves.

(Document/ 7.03.06/ meeting minutes)

A further meeting revisited the concept of choice and its importance in the exploration of identity. The teachers reflected on their own concepts that they were developing and documented how these thoughts could be linked with experiences that could be provided to the children.

Having choice is how we are empowered; the choices we make provide control in our lives (if this can be made explicit to, them, they will be more capable of making choices that impact their learning more effectively and appropriately).

Everything you do requires making a choice (recognize they make hundreds of choices every day, from the smallest to the biggest; identify them and categorise them (possible categories: things you do alone, with others, because you choose to, because you're told to, don't know); link with previous home-learning – analyse and graph collected data; highlight the concept that everything they do requires a choice on their behalf; investigate opportunities for making different choices identifying the impact of the change (brush teeth vs. don't brush teeth…what are the repercussions? Long term, short term, how important is this choice?); risk taking – low risk vs. high risk).

The choices you make now have an impact on your future (immediate and distant.)

The choices you make impact on others (positive/negative, direct/indirect, locally/globally)

Payback revenge is not a responsible response.

Recognize various roles, hats, and facades worn/shown within particular contexts.

They determined the skills they wanted to develop in the children to use in their everyday lives.

Self-awareness - recognise feelings and respond appropriately

Compromise – can I live with it?

Negotiation

Active listening

Responsibility – self and community

Demonstrate strategies to change personal world

Exhibit and use a range of thinking strategies in making choices

(Document/ 23.3.06/ meeting minutes)

The same process was developed in the second big idea of sustainability. After exploring the children's current understandings about environmental sustainability, the teachers documented at a meeting the understandings they wanted to explore with the children and the skills that it would be possible to develop. They related these understandings to the areas of interest of the children: plants, water and the solar system.

Understandings

1. Knowledge is formed over time through different kinds of processes and languages.

2. Recognising that the environment is a finite resource and it needs to be managed and cared for and nurtured / sustained if human beings are to continue to exist on earth. We have the power and responsibility to do something about it.

3. Structural features of living things.

4. Ecosystems – Understanding the environment as a system.

5. Human impact on the environment.

Key skills:

- The language of science
- A sense of wonder and imagination
- Ways of finding out – investigating
- Scientific model – How theories lead to hypotheses, being tested with experiments to provide evidence

More explicit links:

How can we have a more effective relationship with nature/ the environment?

Understanding of science as a system

We are part of a system of life. As the most powerful component of that system we have the power to impact positively or negatively.

Inventions

(Document/ Term 3 Week 6/ meeting minutes)

As is evident above, the reflective process of the collaborative planning was an ongoing process that began at the start of the inquiry process and that guided the development of the research. The teachers' goal was to explore ways to develop the children's learning from the narrative form to empirical knowledge, and then deeper to theoretical knowledge. The teachers however focussed on valuing the everyday experiences of the children and their current concepts based on an interpretation of these experiences and sought to develop this knowledge to a scientific level, in turn influencing the child's everyday perceptions. The tracing of this process was based on the analysis of documentation of the learning, which took various forms

such as conversations, photos and/or artefacts (see below). The immersion phase of the projects is now described.

6.3.2.3 Immersion – exploring possibilities for research.

After the teachers had explored the children's theories and current understandings and determined possible outcomes for the project (as evidenced in discussions and meeting documentation), further experiences were provided to explore the possibilities for collaborative research. This process built on the children's everyday and narrative knowledge. Exploring empirical knowledge leads to the development of theoretical knowledge through which a deeper analysis and reflection of the child's everyday knowledge and narrative knowledge is possible. Documents consistently showed that ideas for these experiences came from the teachers, children, parents and colleagues; this process demonstrates the concept of a community of learners in action.

For the first research project a decision was made to broaden the children's perception of identity. This focussed on two aspects, physical and emotional wellbeing. In a reflection document, a teacher outlined the immersion focus centring on the physical wellbeing of the students.

> In response to and in anticipation of the Commonwealth Games we began looking at the physical body and the development of a healthy lifestyle through an investigation of sport and healthy lifestyle choices, including a strong emphasis on healthier foods. This investigation involved immersion activities that included: the introduction of daily fitness activities to develop an awareness of body and fitness; the inclusion of a 'sports centre' within the classroom involving a variety of fitness activities that required physical engagement as the creation of data, recording skills (which includes the practical use of various standard measuring implements) to record data, analysis skills to identify which data was stagnate and which was malleable; expression of analysis

> including the verbal interpretation of a comparison of the data (i.e.: most children in our grade have the same number of heartbeats per minute; the children in our grade watch more hours of TV than hours reading books; 30% of the children in our grade come to school without breakfast), evaluation skills to decide which data was important or useful for the purposes of our project, social / team skills as activities required the assistance of a friend; the Human Skeleton design brief and construction activity…; computer software exploring different aspects of the human body and healthy lifestyles; an excursion to Science Works Museum to expand our understandings of the functions of the human body (what it's made of, how it works, what keeps it healthy). Our original intentions for collecting the identified data were centred on the assessment and development of certain mathematical concepts, in particular, measurement in its many forms (i.e.: time, temperature, rating or grading, basic number) and uses.
>
> (Document/ 16.4.06/ teacher reflection)

Document evidence showed that immersion to explore the concept of emotional intelligence began with the idea of a magic genie that could grant three wishes, which was raised during a discussion with the children on an unrelated topic. The teachers asked all the children to write three wishes, anything in the whole world, that they would ask this genie for. The goal of this activity was to explore what was important to the children in their lives, thus exploring to a deeper level some of the key aspects that determined their identity. The responses were presented as a categorising task that was a learning agreement activity. The outcomes of the task were summarised by teachers in a reflection.

> Investigating Wishes…
>
> Why do you make wishes?
>
> - Because you want something…for yourself or for others.

A wish can be possible or impossible.

Why wish for something 'un-extraordinary'?

- Really want it

- More likely to come true

Kinds of wishes? (Categories)…

(Document/ 28.03.06/ documentation)

Data analysis noted that the teachers were surprised by the simplicity of many of the student responses and the strong relationship of the responses to their personal lives, rather than community or global issues (28.03.06 /document/ field notes).

Analysis of the documents consistently showed conversations were used to provoke thinking and to explore the current perspectives of the children on key concepts. A conversation below developed from the provocation statement "Having choice is how we control our own lives". A conversation highlights the different perspective of children on the same experience and the choices they make.

D: Sometimes when you're really angry with someone, you lose control

T: I sometimes can't control myself…I sleep with my brother and sometimes he makes funny noises when he's sleeping and I can't help it and I jump up hitting him and jumping on him.

A: My brother makes noises when at night and I just ignore him.

T: I can't ignore it. (Document/ 29.3.06/ documentation)

It was noted in the analysis that planning documents show that Term Two began by following on from establishing the children's current understandings about the concept being investigated and working on immersion experiences to broaden that concept, to the goal of setting a research question for investigation in order to produce new knowledge, a new theoretical perspective on a key issue. These shared experiences led the teachers to decide to explore with the children the interpersonal concept of seeing ourselves in relationship to each other and the intrapersonal concept of seeing ourselves from within us. The teachers also reflected on the impact of a person's physical identity, as the first judgement made about a person can be what they look like (Document 29.03.06). These goals were expected to take the children's learning deeper than the children's initial perception of identity and in turn impact on their everyday lives.

The teachers took the following questions regarding choices to the children

1. What would it be like if we could have the world?
2. Having choice is how we control our own lives
    a. You can change what happens to you by the choices you make.
    b. Everything you do requires making a choice.

What do you think of this statement?

What questions does it raise in your life?

These were followed by the question "How do the choices you make control your lives?" The following document outlines some of the choices the children were aware of making within their lives.

A: When you make a choice, like you start fighting with someone, you're controlling yourself to do that.

B: When you're having a really bad day, and things keep on annoying you with stuff, and things don't work and you get really angry you try to calm yourself down.

Describe a choice that you have made that has changed or affected your life.

S: When I started tennis I started because of my parents but then it was my choice to continue playing for about 3 years and it was my choice to quit and start playing soccer.

(Document/ 29.3.06/ documentation)

Often conversations took a different tangent, which led to new insights into the children's thinking. The following conversation presents an important insight to the children's thinking about 'difference'.

R: It doesn't matter if you are a boy or a girl…we are all humans.

B: You might speak another language…

Z: I still doesn't mean you're different…

D: It doesn't matter if you have a different colour hand…(shrugs shoulders).

M: It's not as if you are going to pass on the colour onto our skin!

T: If people have brown skin or white skin, it doesn't mean you have to dislike them.

Ra: It's about what's in your heart!

Mi: Yeah because your skin colour is just on what's on the outside and it matters what's on the inside not the outside.

Z: It's about your attitude…you can't judge people on who they are if you don't even know them.

(Document/ 29.3.06/ documentation)

A response to this perspective led to the question "How do we choose people and how do people choose us?" Teachers explored a summary of the responses by the children at a planning session.

Facial expression (smile / eye contact)

Behaviour (good or bad / right or wrong)

How they treat others (mean or nice)

Gender (boy or girl)

Similar interests (after initial contact)

Body language

Do they have other friends, 'Are they well liked'

Participating in an activity you like (prior to first contact)

Looks 'If they look 'okay'…if they look 'strange''

Trusting yourself ' knowing yourself', 'confidence', 'trusting your judgement'.

(Document/ 03.04.06 / teacher reflection)

Analysis of the data found that the immersion phase at this point was drawing to an end for the big idea of identity, as key ideas and possibilities for research were emerging.

The analysis of the data on the immersion phase within the second project noted that the first research project had provided the stimulus for the second project and the exploring of prior theories and understandings about values had been completed in detail as outlined above. Linking of the projects was explored through the question, *What do you value most about the environment?*

Values identified by students:

Water – water cycle and how water impacts food chains;

Plants and Trees – impact on food chains, air quality, animal habitats, resources provided;

Animals – food chains and enjoyment;

Recycling – positive impact on pollution.

1st October (working in pairs)

(Document/ 01.10.06/ documentation)

The following minutes outline the immersion into the second big idea of sustainability.

Knowledge & Experience with the natural world

Practical/experiences to gain knowledge about the natural world.

Practical knowledge – experimenting

Excursions to different environments

- Plant life
- Structural features of living things – Animals and Plants
- Water cycle – Where does water come from?
- Food chains - Web of life – What happens of impact
- Ecosystems – symbiotic relationship/ reciprocal / balance
- Solar System

Human Impact – Debate – multiple views/perspectives

Introduction of Rabbits, Foreign animals

Pollution

Water restrictions

Recycling

Plastic bags – debate whether we should pay

Understandings:

1. Structural features of living things.
2. Ecosystems – Understanding the environment as a system.
3. Human impact on their environment.

Other Possibilities:

Inventions for environmental sustainability

Water treatment

Recycling plants – Gould League? (Tel: 9532 0909)

Language: Articles on

Inventions /solar system/ recycling

Melbourne Water incursion

Questions:

What do you think the main problems for our environment are?

How are humans changing the environment?

What can YOU do to help improve the environment?

What is your biggest concern about the environment?

What are our responsibilities to the world?

What do you value most about the environment?

(Document/ 01.08.06/ teacher reflection)

It was noted in the analysis that in a planning meeting teachers documented their intentions for the following four weeks of immersion activities, with the aim to develop children's understandings of the concept being explored. Again, this was aligned to findings from the Radical Local Theory of Teaching and Learning study (see Section 3.5.7), since both this and the present study showed that the development of theoretical knowledge and thinking strategies support children in determining the relational connections between the many

different elements within a system, which in this instance is the concept of sustainability. Davydov (1990) argues, "Mental experimentation forms the basis of theoretical thought which operates by scientific concept" (p. 249). It was noted in the data analysis that the teachers provoked this mental experimentation through questioning.

> Once the children had shared their theories and understandings about the environment, we identified the major areas of knowledge, which needed to be targeted to deepen their understandings and address some of their misconceptions.
>
> The plan was to immerse the children first in experiences to build their scientific knowledge about the environment, focussing on three major systems:
>
> - The solar system
> - Ecosystems (including plant and animal systems)
> - The water cycle.
>
> These would lead into deeper investigations and discoveries about human impacts on the environment including:
>
> - Pollution
> - Recycling
> - Destruction of Habitats
>
> (Document/ 09.11.06/ documentation)

The teachers, as documented below, reflected on their desire for the children to gain deep learning about each of the topics.

> The children's understanding is not internal – based on outside experience. So… our direction and focus…

> Whilst many of the children were passionate about "space", most of them had not before considered the impact of space on earth and our environment.
>
> … To create hypotheses about the environment and to test these hypotheses such as what do plants need to grow? Throughout the immersion, as we investigated, more and more questions came … with more and more rich discussion demonstrating the children's deep level of thinking. The community looked at ecosystems, plants and animals individually and also how they interacted together through mind maps and Venn diagrams.
>
> Through workshops the children demonstrated that their understanding of water was limited to the everyday uses. Many of the children still believed that our drinking water comes from the sea.
>
> We looked at the water cycle… did an experiment to see what actually happens … and talked about where our drinking water comes from.
>
> (Document/ June, 2006/ Teacher reflections)

Field notes document that poster reflections on the learning had children exploring the following topics and activities: planet structure, what plants need to grow, developing an environment scrapbook, community environment walks, the solar system, what is pollution, the water cycle, Dandenong Creek, Melbourne water, a smog experiment, the notion that humans never die, East Link walk, early man, what is an animal, habitats, rain, radar and water, Fern Gully video, recycling and treasures of nature.

Field notes document that the community identified that pollution was one of the major ways that humans are impacting on the environment. They had seen evidence of this in earlier environment walks through graffiti and rubbish in the streets. They decided to explore the possibility of building on the concept of making a difference from Terms One and Two. The comment by a child *"I'm only me; I can't change the world"*, was still impacting on their

thinking. They projected the possibility that this project could focus on designing environmental inventions with an emphasis on exploring the natural environment. A timeline was outlined for the project. Nevertheless, in response to the ideas of the children within the community of learners, the research project took a very different path.

The immersion phase of the two projects had used the children's narrative and everyday understandings of the concepts of identity and sustainability as a starting point to provide experiences that enabled the children's learning motive to become connected to subject-matter concepts, as has also been described by Hedegaard (2002, p. 21) and researched through the Radical Local Theory of Teaching and Learning (see Section 3.5.7). In turn, the subject-matter concepts became the basis for the children's development of a reflective and theoretical orientation to the world. For school aged children to be supported in thinking theoretically they must experience the world through the lens of contemplation. Davydov (2008) argues (see Section 3.5.7) that "the task of theoretical thinking is to rework the data of contemplation and conceptions in the form of concepts, and thereby to fully reproduce the system of internal connections that give rise to the given concreteness and reveal its essence" (p. 100). "Empirical thinking solves the task of cataloguing or classifying objects or phenomena. Theoretical thinking sets itself the goal of reproducing the essence of the object of study" (Davydov, 2008, p. 107). The community of inquirers in the present study unpacked the essence of the concepts of identity and sustainability as relevant to the social situation of development of the children. This process seems in turn to have created a *double move* between their everyday lives and the development of scientific thinking. Evidence of this process is outlined in the following sections tracing how the community enacted a research project based on their new understandings and made this learning visible to the community.

6.3.2.4 Collaborative inquiry research.

Field notes indicated that after initially exploring the big idea of identity, the task of the learning community was to decide collaboratively upon a research project. The children analysed what they valued, what was important to them to research. These data were collated and used as a major display within the room, and were reflected upon throughout the year. The 'What We Value Wall' comprised the main headings: relationships, personality/character traits, environment, possessions, and lifestyle.

As documented below, the teachers reflected on the year thus far. *'I'm only me ...I can't change the world'* (Student comment). This statement impacted profoundly on the teachers when I attended a planning session with them (11.04.06/ document/ meeting minutes). It led to a discussion on how the community of learners could make a difference. They considered the key ideas of empowerment through actions behaviour and attitude; community responsibility; current events and issues within the school and globally; choices, *'I can make a choice with how I respond, behave and feel' and* what to do that changes things, *'Pay it forward'*. (17.04.06 / document/ mind maps). The teachers proposed the following plans.

> <u>Planning meeting</u>
>
> I'm only me how can I make a difference.
>
> <u>Personal issues</u> I'm only me… look at body image, self-esteem, confidence and positive self-dialogue.
>
> <u>Relationship issues</u> … how can I make a difference, look at choosing friends, choices required in being a good friend. Who am I Intra-personal intelligence? Self-portraits, personal collages, who am I game, literacy experiences. How do I impact those around

> me? Interpersonal intelligence team building, collaborative learning, reading body language, looking at faces, responding to body language positive or negative choice.
>
> Empowerment issues (I'm only me … I can make a difference.) Choice – I have a choice in how I respond to my world.
>
> (Document/ 17.04.06 / meeting minutes)

Researching each of these three key issues of personal development, relationship development and empowerment, enabled the children to develop their theoretical knowledge with a focus on logical reasoning and concept formation within these concepts. In turn their narrative knowledge, located within everyday experiences and practices, deepened through making associations with these three issues within their lives. This supports and is supported by what Vygotsky (1987a) showed in his research:

> These two types of concepts are not encapsulated or isolated in the child's consciousness. They are not separated from one another by an impermeable wall nor do they flow in two isolated channels. They interact continually. This will inevitably lead to a situation where generalizations with a comparatively complex structure, such as scientific concepts, elicit changes in the structure of spontaneous concepts. Whether we refer to the development of spontaneous concepts or scientific ones, we are dealing with the development of a unified process of concept formation. (p.177) (See also Section 2.3.3)

It was noted in the evidence that the following documents outlined how the teachers went back to the children again to gain insight into the children's perspectives, in turn creating a dialectic within the community of inquiry (see Section 3.4.2). "How have I tried to make a difference?'" was explored through individual interviews with children who wanted to share an experience. Some examples of the children's responses follow.

H: One time last year at lunch time I saw a prep girl all alone and sad because no one was playing with her. My friends and I went over and took her to the monkey bars to play. She was much happier and I felt good because I helped someone; and being alone makes me sad so I didn't want her to feel like that.

(empathy)

Mi: One time when I tried to make a difference was when I saved a lost dog. We took her inside and we fed her. We wanted to achieve getting her back to her owners. We put out notices and two nights after, the owners came to pick her up. The dog's owners were happy. I felt like we'd done the right thing by taking good care and returning their pet.

(Document/ 23.04.06/ documentation)

Analysis of the data noted how each child through interviews explored "How I find Happiness" with a teacher. The children's responses were displayed in the classroom. Some examples of responses follow.

H: I find happiness by letting my family live happily because I love my family so much.

S: I find happiness by being someone's friend first because I think it's a good way to find happiness.

J: I find happiness when I play my P.S. 1 or P.S. 2 or computer video games.

And I also find happiness from food. That really makes me happy.

Mi: I find happiness by getting stuff.

Playing PlayStation.

Climbing trees.

Eating lollies.

Getting money.

Nice friends.

E: You find happiness by being nice to other people.

You always have to respect others even if they are not part of your family.

You might find happiness by keeping yourself under control.

(Document/ 26.04.06/ documentation

"What makes a good friend?" was explored through interviews with children.

M: Talk to your friends and have fun.

If someone is hurt, I help them.

If someone is by themselves ask them to play with you.

If there is a fight, I can help to solve the problem.

H: A good friend is a person that cares about friendship a lot.

Plus somebody that doesn't just go "Lets go to the prep area".

They should ask.

And they don't just be your friend to get what they want.

Plus they should be kind to others as well as ourselves.

And if they've done all of that I do not care about gender

Ma: I make a good friend by respecting them.

I also start by introducing myself.

I sometimes start by talking to them and using good manners.

I always introduce them to my other friends.

Sometimes I draw them one of my good drawings and they start to be my friend.

(Document/ 26.04.06/ documentation)

The following extract from a shared teacher's written reflection shows how the teachers continued to reflect on their process.

> I don't have the perception that these students link their current life to their future life. If we can make that concept more explicit to them, they will be able to make more effective choices with their learning and in their pursuit of success, happiness, love, etc.
>
> Is it fair / appropriate to ask children of this age and developmental stage to anticipate their adult futures?
>
> What link to the future is apparent through student understandings?
>
> Are students anticipating a future?
>
> Is there an understanding that the choices made today can influence their futures?
>
> (Document/ 3.6.06/ teacher reflection)

Teachers end this planning session with questions about student thinking.

> Do the things that make you, you, represent the person you think you are or who you want to be? Do they allow others to see that person?
>
> What choices are necessary to develop the person you want to be?
>
> Does your current way of thinking and behaving support and direct you towards this image?
>
> (Document/ 3.6.06 / teacher reflection)

Field notes outlined the teachers' brainstorming of possible ways to make the community's learning visible:

- Possibilities of a movie/documentary
- Acting it out… demonstrating choices
- Masks
- Commedia Dell Arte
- Physical Theatre

Analysis found the teachers had explored possibilities that would enable the community to express the findings of the research and also possibilities that would connect with the children's interest in performance.

It was noted in the analysis that in the second project on the big idea of sustainability, after students had participated in a variety of immersion activities, the teachers decided they needed to assess any change in the children's understandings about the environment and then, based on that information, confirm the direction of the project. (Document/ 07/06 /meeting minutes)

In order to collect these data the children responded to questions, working in small groups. A teacher summarised the responses to these questions in a planning document.

What do you think the main problems are for our environment?

Summary of main problems identified by students:

- Deforestation resulting in poor air quality and the development of urban areas;
- Drought and water shortage;
- Air and water pollution impacting on animal habitats; killing animals.

What is your biggest concern about the environment?

Main Concerns Identified by Students:

- Global Warming;
- Water pollution and shortage;
- Pollution and its impact on the environment – specifically animals;
- Extinction of animals;
- Deforestation

What can YOU do to help improve the environment?

Main Actions Identified by Students:

- Stop littering;
- Pick up litter;

- Inform others about pollution and its effects on the environment;
- Inform others about wasting water, killing animals and smoking;
- Plant new trees.

(Document/ 28.09.06/ teacher documentation of evidence of learning)

Analysis of a planning document showed that the responses to the last question prompted the idea of a campaign: *Stop, Demonstrate, Inform, Revive Campaign.* The Campaign was driven by the questions, *What does it take to change people's behaviour or thinking? What are the best actions for this issue?* The aim was to develop understandings of the concepts, *Model/demonstrate, educate/inform, regenerate /revive*.

The key issues identified were:

Destruction and chopping down of trees

The ozone layer disappearing - global warming

Urbanisation – sustainability and management of resources and wastes

Destruction of habitats – animal extinction, pollution – water, air, land – impact on the environment

Low water supply

Management of resources – energy, water

Waste

(Document/ 04.06/planning minutes)

The context for research was the local community, including the local wetlands, and the concept of looking at the school grounds as a habitat (Document/ 04.06/planning minutes).

Determining the key environmental sustainability issues had been enabled by making the children aware of their limited narrative knowledge and developing their empirical knowledge. The understandings constituted in the *Stop, Demonstrate, Inform, Revive Campaign* and driven by the questions, *What does it take to change people's behaviour or thinking? What are the best actions for this issue?* enabled the children to develop their theoretical knowledge. A focus on logical reasoning and concept formation involved an understanding of the differences between between the practices of *Model/demonstrate, educate/inform, regenerate/revive*. This in turn deepened their narrative knowledge, which was located within the new everyday experiences and practices gained through acting on these concepts within their lives. This process is described in the following section.

6.3.2.5 Making learning visible.

Data analysis revealed the discussion surrounding selection of, an approach to make the learning visible for the research on 'Identity'. This discussion occurred at a community meeting and was part of the dialectic of a community of inquirers. The purpose of making the learning visible was to make evident to the learning community the new understandings by making a difference as a collective in that community. A play using masks was decided upon, however after exploring this concept further, it was abandoned, and the decision was made to develop group films. The following newsletter article documents the decision-making.

> During teacher's planning time last week we agreed on some learning experiences we would engage the children in because we wanted to move them from a more literal interpretation of masks and values, to a deeper thinking process. This included:

Thinking about what a mask would look like in different scenarios,

Looking at masks and trying to interpret the meanings represented by the mask;

Experiencing how it feels & what happens to your identity when you are wearing a mask.

By Friday we had exposed the children to all of these experiences and had seen just a few small flashes of insights about how to represent identity through masks, but mostly the children were not showing any deep engagement with how to represent their ideas symbolically. They wanted to make masks but were not showing deep connections with identity.

On Friday after lunch a spontaneous conversation arose about friendship issues and our values because one student had been excluded from a game and got very angry and upset. During the discussion, (Teacher's name) said, "You know with all these amazing things you are saying, we could make our own "Being Me" episode we could do it and not just talk about it". After school, (Teacher's name) said, "Why don't we make a being me episode?" As the idea developed we realized, that although making masks could be a deep way to make the learning visible, the children were not really connecting with it at that level. But a video would represent what they are saying and doing about identity much more closely. We felt that would enable the children's voice about their learning to be much more visible.

So Monday and Tuesday we brought the ideas to the children. What about making our own 'Being Me' episode? The tone was generally excited but nervous about what might happen and how it would work. By Thursday afternoon we had brainstormed ideas for our Video. It's becoming a reality. Our "Being Me" episode will focus on Relationship Issues including sub-issues of: Joining In, Making Friends, Keeping Friends, and Standing up For Yourself.

We look forward to sharing our 'Being Me' episode with you next term.

(Document/ 09.06.06/ newsletter)

It was noted in the analysis that the children decided to create a film in response to the research question, "How can we make a difference with the choices we make?" The children worked in groups to create each segment. The following document outlines the segments of the film.

> Introduction: the children share what friendship is and talk about what's in the film. The film takes the story line of a news broadcast crossing to stories about scenarios of children's situations such as playing games, spot and beat boxing, providing advice section, another could provide a scenario with five different responses and ask the viewer to decide on the best response, and interviews with children about joining in, making friends, keeping friends, standing up for yourself and a conclusion.
>
> (Document/ 06/06 /documentation)

Analysis of the data found that making the learning visible regarding the big idea of Sustainability was explored through the development of a campaign to build community awareness.

A conversation discussed how awareness might develop and its importance.

> What are we trying to do with other people?
>
> T: To educate other people.
>
> H: To get people interested.
>
> J: To get them to care.
>
> What is the purpose of our environment campaign?
>
> St: To get people not to litter so the sea animals don't get extinct.

B: To get people to care about the environment. You could tell people around the neighbourhood.

H: Maybe we could actually try to tell the people in our local area to care about the environment and to educate them.

A: We're doing a campaign because we want OTHER PEOPLE to care about the environment.

Because…?

R: Then they will spread the word.

S: Then they will take action.

Last week, B suggested that we could use the Arts Festival to convince people to change.

What might we do at the Arts Festival to convince people to care about the environment?

B: *Like a show-bag.*

(Document/ 06 / documentation)

From these conversations, students chose to distribute a show bag at the school Arts Festival. Documentation outlines the subsequent experiences of the community. In later conversations they discussed which items to include in the show-bags that would best suit their goals. They decided to include a badge, a fridge magnet, a packet of seeds and a sticker. Students then began designing these items following guidelines. Once everyone created their designs, students voted for the designs to use for mass production. Water Watch Australia, as a result of the children being involving in local activities stencilling litter prevention slogans on all the

storm drains also donated a second fridge magnet, bumper stickers, book-marks for each show-bag, as well as a t-shirt for all the students in the grade.

Analysis of the data showed that as part of their environmental campaign the community decided to participate in a Water Watch activity, which marks the storm drains around the school by stencilling environmental messages on them. A representative from Water Watch came into the school to assist with this. In preparation for the Water Watch representative's visit, the students needed to locate all the storm drains around the school. They were asked to draw a map of the school, including the storm drains, from a bird's eye perspective. This activity provided more opportunities for students to develop their understanding of this perspective, which was also the basis for the Earth as Art project, a response to visiting The Earth as Art exhibition. (Document/ 16.11.06/ documentation)

Students also designed posters to put up around the school to encourage environmentally friendly behaviours. (Document/ 24.11.06/ documentation)

The field notes show that the school arts festival became the audience for the student films on identity; large art panels developed as part of the immersion into exploring sustainability and the festival was a venue to distribute the children's show bags.

The dialectic of a community of inquirers was revealed in the quote from the school newsletter:

> They wanted to make masks but were not showing deep connections with identity. On Friday after lunch a spontaneous conversation arose about friendship issues and our values because one student had been excluded from a game and got very angry and upset. During the discussion, (Teacher's name) said, "you know with all these amazing

things you are saying, we could make our own "Being Me" episode we could do it and not just talk about it." (Document/ 09.06.06/ newsletter).

The teachers continually reflected on the purpose and relevance of what was being learnt, continually taking ideas and reflections back to the children for discussion. The meaning of the experiences for the development of the children's theoretical understanding, and in turn the transference of the new concepts into their everyday lives were highlighted in the final decision for the children to make videos based on analysed life experiences of the relationship issues of Joining In, Making Friends, Keeping Friends, and Standing up For Yourself.

Analysis of the data found that the community's desire to impact on the broader community by making the learning visible reflected the key concept of a *Stop, Demonstrate, Inform, Revive Campaign* driven by the questions, *What does it take to change people's behaviour or thinking? What are the best actions for this issue?* The learning took the notion of sustainability from a concept accorded little importance in the community to the exploration of empirical understandings such as the structural features of living things – animals and plants, water cycle, food chains, ecosystems and the solar system. These empirical inquiries led on to theoretical knowledge of the key issues, which were identified as: *destruction and chopping down of trees*, *the ozone layer disappearing - global warming*, *urbanisation – sustainability and management of resources and wastes*, *destruction of habitats – animal extinction, pollution – water, air, land – impact on the environment*, *low water supply*, and *management of resources – energy, water* and w*aste.* The final stage of learning used this knowledge to make an impact on the community through the *Stop, Demonstrate, Inform, Revive Campaign.* This process achieved what Wardekker et al. (2012) recommended: "Learning needs to be organised in such a way that students can relate educational content to their own past, present and imagined future, and are stimulated to do so" (p. 166). Learning in a community implies

that students feel connected to the learning content and take responsibility for their own behaviour in connection with the knowledge and skills that they acquire.

Analysis of the data found the goal at the beginning of each inquiry was for the children to come to an engagement with and understanding of these concepts through the inquiry process, enabling the child to positively and actively participate in this community, developing it for future generations The achievement of this objective was enacted in these instances through the '*Being Me'* film development and the *Stop, Demonstrate, Inform, Revive Campaign*. This community process is also clearly related to what van Oers (2009), working within the Developmental Schools Netherlands (discussed in Section 3.5.6) argued, namely, that teacher knowledge of subject matter is extremely important, as subject matter content "can be introduced into the children's activities at moments when this is relevant" (van Oers, 2009, p. 223). Fleer (2010) states, "It is only when teachers have a very good understanding of both subject matter content and a detailed understanding of the children they are working with, that effective learning can be organised as culturally relevant practices" (pp. 2–11).

6.3.2.6 Student reflection.

The many conversations and experiences documented above provided evidence that student reflection on their learning is an ongoing process throughout the year, with the goal of the children understanding new learning. A further goal was that this new learning should impact on their everyday life and future experiences. To illustrate this, the following documentation by teachers highlights how at the end of the sustainability project students were asked to respond to questions to assist them in identifying changes in their own behaviours, and beyond that, to help them understand the processes involved in getting people to change their

behaviours. The following documentation also demonstrates how teachers documented and discussed the children's learning.

> Have any of your behaviours changed since beginning the Environment Project?
>
> What has made you change your behaviour?

Some of the responses included:

> A: I changed my behaviour by stopping littering because if the wind comes it will go [take the litter] down to the wetlands and choke the sea animals; I will not kill little animals, I care about animals.
>
> I: I didn't water plants first, but then I water the plants because it could grow, so the environment grows.
>
> T: Yes, because now I care about the environment. When I came to school at first I did not care about the environment but now I do care about the environment so now I don't litter. Our project and seeing commercials on TV about trees getting cut down [made me change].
>
> B: I have been putting more of my rubbish in the bin and taking less time having a shower. Because seeing where it (rubbish) ends up and how much it hurts the environment made me change.
>
> (Document/ 04.10.06/ documentation)

Comments made by students in a group discussion of the question *Why have you changed your behaviours?* were reflected on by the teachers at a meeting.

> The students identified that their behaviours changed because:
>
> - They have become more aware of the environment;

- They have been educated about the environment and the issues that surround it;
- They have developed an understanding of the impact of their actions on the environment;
- As a result of the above process they now care about the environment.

Through further discussions, the students identified that we are a small group within the school community, a smaller group within the wider community, and an even smaller group within the global community.

They recognized the limitations and unsustainability of any actions that we, as individuals or as a class, could take and they soon realized that we needed to get other people involved.

Students discussed how to get other people to change their behaviours and take action. Their responses included:

- Tell them not to litter; put up posters/signs;
- Show them what could happen, what is happening;
- Use pictures to show them a before and after (cause and effect);
- Demonstrate the right thing to do

From these responses it was clear that the students understood the processes involved in getting people to change their behaviours and confirmed that a proactive campaign incorporating their ideas was the way to move forward.

(Document/ 17.10.06 / teacher reflection)

Ongoing reflection both as a group and individually is an important and embedded aspect of the inquiry process and the key to the dialectic of a community of inquirers. The quote above "*They have developed an understanding of the impact of their actions on the environment"*

highlighted the transference of the children's new theoretical knowledge to their narrative knowledge and everyday lives and led to the decision to try to affect other people's beliefs through the campaign to influence the community both in the present and in the future.

6.3.2.7 Learning journey – collaboration.

Diary notes documented that alongside the inquiry project, each child had their own learning journey document, developed collaboratively between the teacher and child, with input welcomed and encouraged from parents. Children could work on the negotiated experiences both at school and at home. Learning agreements accorded children choice in what they would do (and when they could do it) based on the provocations set up in the physical environment. It also allowed them to negotiate their own experiences and investigations, which they documented on their learning journey. The teachers worked throughout the year to engage the children more deeply in thinking about why they were choosing the particular activities. The teachers reflected on how they could stimulate children's experiences with provocations, continually reflecting on what the learning priorities were.

A teacher discussed the negotiation process of the learning journey.

> Gemma: Last year we had a very open ended learning journey that really just had spaces with dates and signatures and the idea was that the children would negotiate and engage in independent or you know supported independent activities that were of interest to them and related to the project or related to areas of learning that we were doing. So we started out and I think sort of stayed throughout the year with a fairly generic kind of board where we would put up ideas both coming from us but also increasingly brainstorming with the children things that they think would be important to do and to learn about so there might be things like playing chess or those kind of things and then they would write that on their learning journey and that would then be a point of negotiation for us about and tracking and monitoring what they were

> learning.
>
> (Interview/27.02.07/ Gemma/ Teacher Year Three).

A teacher reflected on a learning agreement time experience:

> T and St had made a commitment to try to design then construct a life-sized model of their own skeleton. Decisions had to be made about the parts they wanted to represent in their model. The boys constantly talked, negotiated and justified their thinking throughout the task…we were privileged to be witness to their learning…
>
> (16.2.06/ document/ documentation)

Field notes indicated provocations for learning agreement were continually revised and changed or modified based on reflections on the children's involvement and the understandings being developed.

Parents' comments on this process reflected their valuing of the relationship where the children were encouraged to negotiate their learning.

> Parent: I know from my children that teacher relationship is what motivates them to learn, they're interested in wanting to find out about things and it's no matter what it is that they're interested in, it is acknowledge okay you want to head off there why do you want to head off that way and how are you going to do it what skills do you need what people do you need, what do you need from me, to help you go that way.
>
> Parent: I think too allowing them to follow in their interests so whatever they're interested in whatever they're good at.
>
> Parent: There's purpose.
>
> Parent: And there's a purpose yeah.
>
> (Interview/19.03.07/ Parents)

Analysis of the learning journey document found the document was a means of personalising the learning for each child ensuring relevance and connection to the children's interests as well as providing opportunities for development. This is further developed in the following chapters.

6.3.3 Summary.

In this chapter I have outlined the processes used to develop the educational program. These were examined through an interpersonal lens. Through the interpersonal relations a *community of practic*e developed that was enacted by the community of learners including children, parents and teachers. The participants were *transformed through their ongoing participation* in the cultural activity of education, through interactions in a dialectical relationship involving reciprocal roles. The concept of *pereizhivanie* best captures the emotional state in which emotion and cognitive processes are inseparable, where building a supportive, engaging environment enables deep, meaningful learning, creating opportunities for *obshchenie* where development and learning are entwined and children become the subject of their own learning. Both *pereizhivanie* and *obshchenie* occurred for the children, teachers and parents in the community of learners.

Participants collaboratively engaged in creating educational possibilities for the community. Teachers' worked together collaboratively with a group of students provoking both children's and parents' participation. Creating a zone for potential development, a social and cultural world that lies within the child's sphere of engagement leads to creating an individualised zone of proximal development where engagement with a more capable other leads to actual development. This process was also evident in the community studied. *Shared sustained conversations* evolved, connecting teachers with the children's everyday knowledge and

experiences. *Conceptual framing* was enacted, enabled through keeping in mind both the children's everyday concepts and the scientific concepts to be developed when teachers and children planned educational activities. This also helped create *conceptual intersubjectivity*. Co-creation of the curriculum was achieved through inquiry research projects and through negotiating learning as documented using individual learning journey documents. The inquiry process involved exploring big ideas relevant to the cultural community, determining pre-existing understandings and connecting the main concepts to the lives of the children. Provoking new possibilities through immersion activities led to creating and enacting a research project or series of projects. This in turn made the learning visible to the community. A *double move* was created through the dual impact on both the everyday lives and the development of scientific thinking of the children. The development of theoretical knowledge enhanced both narrative and empirical knowledge. The evidence from this chapter is further analysed in Chapter Nine.

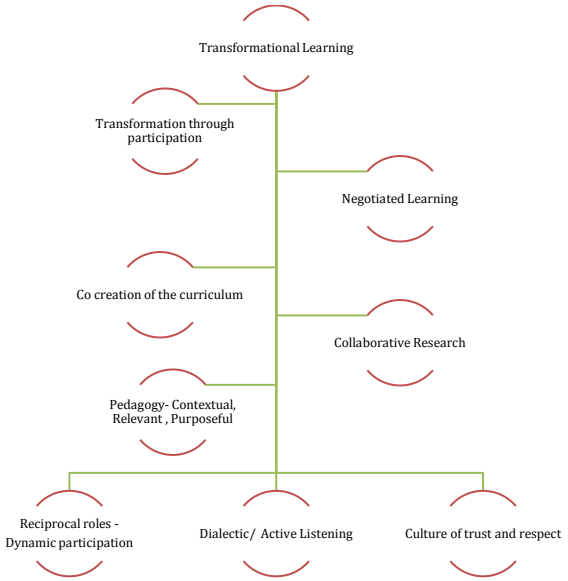

Figure 6.3. Interpersonal interactions

Figure 6.3 indicates the interpersonal interactions outlined in this chapter, including those involved in the co-creation of learning, collaborative research, negotiated learning and transformation through participation, set in a pedagogy that was contextual and had purpose and relevance. These interactions were possible because of the firm foundation of interactions of participants within a culture of trust and respect, a dialectic involving active listening and a culture of dynamic participation enabling reciprocal roles. These interactions promoted transformative learning. In the next chapter I use an institutional and personal lens to analyse the *community of practice*.

Chapter 7
Data Presentation: Learning Structures Provoking Children's Motives and Development in Year Three

7.1 Overview

This chapter continues to document and analyse the *community of practice* (Lave & Wenger, 1991) enacted in the Year Three learning community and the *transformation through participation* (Rogoff, 2003) of the members and the institution as they engage in this cultural activity. In, using Rogoff's *interpersonal lens of analysis,* the previous chapter analysed the relationships and interactions of the participants in the community. In this chapter I analyse the data using an *institutional lens* to identify the shared learning practices enacted through the development of *participation structures* (Rogoff, 2003). The impact of these is scrutinised through a personal lens to examine the participation of the individual from the perspectives of development, relevance and motivation. These two lenses are used together due to the identified link between the institutional structures and the possible personal outcomes for the participants.

7.2 Introduction

This chapter begins in an institutional analysis of the data, followed by a person-oriented analysis of the data. Hedegaard and Chaiklin (2005), using the *Radical Local Theory of Teaching and Learning* (see Section 3.5.7), outline three significant aspects in institutional practice that enable the enactment and development of the practice:

> These perspectives are; *societal*, reflected in historically evolved traditions and Interests in a society that are formalized into walls and regulations; *general,* which can be seen as guided by generalized or theoretical outlines for institutional activities; and

> *individual*, which characterizes the shared activities of persons in specific institutions. (Hedegaard & Chaiklin, p. 38)

These three perspectives are necessary to understand institutional practice and the variations within this particular institutional practice. These three perspectives set the foundation to reflect on the link between institutional practices and personal development and motives of the participants. Hedegaard and Chaiklin (2005) state,

> To realise both general societal interests and worthwhile personal development, the content of educational programmes for children must be grounded in and draw explicitly from the local societal conditions in which the children live. (p. 9)

The previous chapter outlined how these links were made through a co-constructed inquiry approach that develops on the inquiry approaches discussed in Chapter 3 and aligns with Hedegaard and Chaiklin's (2005) "Radical-Local Teaching and Learning". In this approach it is viewed that in government documents on education the goal is set as being to help the children "gain insight into and a capability for using the subject matter tradition to understand the social and natural world" (p.11). Radical local teaching and learning is concerned to fulfil these goals, but focuses additionally on how education

> …can contribute to the personal development of children in relation to their historical and cultural conditions … The focus is on how education, through subject matter teaching can contribute to the development of motives and competencies that are relevant to the child's societal life. (p. 11)

The link between the institutional practices and personal development of the participants goes beyond the child's engagement in the topic of inquiry under investigation and looks at the interests and motives of the children. As stated by Hedegaard and Chaiklin (2005),

> It is not community-studies alone that are critical, but also the potential to develop a closer connection between the content of schooling, the interests and motives of the students, the development of their conceptual understanding, and its relation to the social development. (p. 49)

This is a long chapter with a lot of data, which are needed to provide the whole picture of the context and detailing the interrelatedness of the components identified through the presentation of the data. The full analysis of all of the data is beyond the scope of this study, however the data are presented to provide material for the claims made in the final chapter.

7.3 An Institutional Lens Perspective

Using an institutional lens of analysis, evidence was identified of identified elements, which enabled participation in the learning possibilities. Within the cultural historical theory of instruction examined in Section 2.3.4, Hedegaard and Chaiklin, 2005 state:

> The model Vygotsky promoted was that instruction and learning should be the source of further development, where instruction should prepare and motivate the child to participate in a society's existing cultural practice as well as develop psychological functions of thinking in concept formation that were not yet fully acquired. (p. 12)

Analysis of the data found the participant's defined roles enabled instruction and learning within the institution with the outcomes of preparing and motivating the child to participate in cultural practices, as well as developing their psychological functions of thinking through concept development. The participant's roles were enacted through the following developed structures: sources of learning, communication processes and assessment processes. Rather than being isolated or part of a single set of attributes, each aspect was related with others to form the integrated approach used by the institution. This chapter examines these institutional structures, in the context of the development of children's motives for engaging in learning

and instruction, which in turn provoked development of the child and the overall practices of the community.

7.3.1 Structures for participation.

The role of participants enables the type of participation that is possible. Below is an examination of the roles of the children, teachers and parents in this study, which were seen as an important institutional element.

7.3.1.1 Children's role.

> One task in a teaching and learning programme is to create activities that are interesting for the children so that they develop interest of the kind of knowledge presented in the program and hopefully thereby a general motive for learning. (Hedegaard & Chaiklin, 2005, p. 15)

In analysing the data it was noted that the child's role in the community was active, purposeful and meaningful to the child's life in the present as well as preparing them for their future. This was achieved through creating activities and experiences that were interesting for the children, engaging their interests in the content being explored, in turn provoking a motive for learning, as was found in the use of the projects discussed in the previous chapter. Evidence reflects that the child's voice was valued and actively sought in the development of the learning community as also outlined in the documentation of conversations in the previous chapter, and the thoughts of the children were used to inform future developments of the program. The child's individual learning journey was documented to trace the personalising of the learning. Collaborative research based projects were developed, two of which were outlined in the previous chapter, 'Identity' and 'Sustainability'. In an interview the teachers reflected on the child's role as one of deep, meaningful purpose and connection.

> In the ideal I wonder whether the role of the learner is to own their own learning journey to be empowered, to take responsibility for knowing, for learning, for pursuing, for engaging but then I think to myself well not all learners come to the learning context with that understanding or is it skills like do they not have – skills or understandings to engage in that role. But I guess optimally I think it is the learner's role to seek out to be a centre or central force of their world.
>
> (Interview/ 27.02.07/ Gemma/ Teacher Year Three)

This teacher summarised the role of the child as a learner as a centre or central force of their world through owning their own learning journey, being empowered to take responsibility for knowing, for learning, for pursuing, for engaging. These concepts outlined by the teacher are relevant to the concept of the social situation of development (see Section 2.3.2), "the concept of the place that children occupy within a system of social relationships available to them and their own internal position in life" (Bozhovich, 2009, p. 75). The teachers made available to the children the opportunity to take an active position in their own learning, to be centre or central force of their world, through the co-creation of the learning and the personalising of the learning using an individual Learning Journey Document.

7.3.1.2 Teacher's role.

The following evidence characterises the teacher's role as one with many dimensions; at its core was the dimension of researcher, seeking to provide the most relevant learning for the cohort of children with whom they were currently working.

The teachers thought their role was to create a learning environment including physical, emotional and cognitive dimensions.

> I think something unique … is the role of teacher as researcher too. That sense that we see ourselves in a dynamic, relationship with the school and the context in that we're

> permanently learning more ourselves and wanting to investigate and understand it's not a kind of it's a very stimulating endeavour it's not just a I'm a, tradesperson who's applying the skill of teaching. Creating the learning environment is a huge one and by that I don't just mean the physical environment either; relationships, it's the structures that allow things to happen, optimally kind of like routines, creating a supportive environment for people to feel safe and stimulated.
>
> (Interview/ 27.02.07/ Gemma/ Teacher Year Three)

The focus for the teachers had moved from being an expert in subject areas to the analysis and response to contextual evidence and the child's input so as to provoke the learner's development.

> I certainly don't see it anymore as being an expert in a field but certainly my role is to be an expert in how to engage learners how to teach how to stimulate people. So I think a lot when I'm teaching about how to help children learn or how to develop where they are – what, what's stopping them from growing or what's stimulating them or those kinds of things. And then trying to plan purposefully for that, for what they need. So that's I guess not environmental; that's more a kind of pedagogical – thing.
>
> (Interview /27.02.07/ Gemma / Teacher Year Three)

The teacher's role also included connecting to the wider community through assessment and reporting, parent links and links to other government agencies.

> I guess obviously more broadly than that there's all the other roles of teacher, assessment and reporting you know community creator in the sense of integrating and creating a community with parents and then there's the roles of – so I guess the accountability – and then roles of welfare, roles of reporting to you know, Department of Human Services or department about children and as a colleague I guess too.
>
> (Interview /27.02.07/ Gemma / Teacher Year Three)

An interview excerpt below indicates that parents perceived the need for the teacher to be responsive to the different characteristics of the children within the community.

> Parent: What about the role of the teacher in being in tune to the children, (Parent: yeah) and what their specific needs are. (Parent: mm) You've got your daughter, who likes to take her time, but there are other children who might be excited and be craving for more and faster and (Parent: yeah), what about the role of the teacher in that regard? Picking up on what each child needs.
>
> Parent: adaptability (Parent: yeah)
>
> Parent: And resourceful.
>
> Parent: Resourceful and adaptable.
>
> Parent: Resourceful and being able to assess what their needs are, as well.
>
> (Interview/19.04.07/ Parents)

The teacher's perspective of *the role of teacher as researcher* in *creating the learning environment* was that the process is a dynamic and ever-evolving one supporting the children's learning and development. Fleer (2010) states,

> In a cultural historical view of learning and development the role of the teacher is critical for promoting concept formation. However, the role the adult takes is not about 'matching' materials or activities to the children's current developmental level, but rather conceptually engaging the children in activities well beyond what they could think about on their own. As noted by Vygotsky (1987a) "the teacher must orient his (sic) work not on yesterday's development in the child but on tomorrow's". Only then will they be able to use instruction to bring out those processes of development that now live within the zone of proximal development. (p. 45)

The practice of the teacher interviewed reveals alignment with this view. She said:

> my role is to be an expert in how to engage learners… to help children learn or how to develop where they are – what's stopping them from growing or what's stimulating them or those kinds of things – and then trying to plan purposefully for that for what they need.
>
> (Interview /27.02.07/Gemma/Teacher Year Three)

The focus is on future development of the child's understanding. The parent's perspective is also aligned to this view of the role of the teacher

> being in tune to the children; resourceful and adaptable; being able to assess what their needs are.
>
> (Interview/19.04.07/Parents)

In the following excerpt it can be seen that the learning the teachers desired that the children acquire is deep, related to a meaningful life and enabling a productive contribution to society.

> Sam: …the role of the teacher and thinking about, you know really what a teacher is – it's a person who has either chosen to, to make their life profession about showing young people what it is to be a human being ... the way in which we do that is different but really that's to me is what a teacher is; they – I've – had some life experience. I've had some experience in life and now I'm in a position to be able to teach you about that… . You provide them opportunities to discover this, these pieces of information that will help them become, you know
>
> Anna: Make meaning for themselves.
>
> Sam: Yeah to make meanings about the world but also to become what I guess what we would deem as hopefully successful, happy, productive
>
> Anna: Well-adjusted people.
>
> (Interview / 7.03.07/ Anna and Sam/ Teachers Year Three)

As discussed (Theoretical Framework Chapter 2.4.1), in a cultural historical view of learning and development the culture itself is also transformed. Rogoff (2003) concluded,

> Human development is a process in which people transform through their ongoing participation in cultural activities, which in turn contribute to changes in their cultural communities across generations. (p. 37)

In this study, the teachers' goal for the children's learning and development was to connect with society; as stated, it was: "showing young people what it is to be, a human being, make meanings about the world but also to become what I guess what we would deem as hopefully successful, happy, productive, well-adjusted people" (Interview / 7.03.07/ Anna and Sam/ Teachers Year Three).

The parent's notion of the role of the teacher supported this belief that the teacher is one who is developing the child as a person, not just providing material to learn: *the basic concept is not only the material but the person too*" (Interview/19.04.07/ Parent).

Developing the child towards being a *well-adjusted person* was achieved through providing lots of experiences as outlined in the following section, and this perspective allowed the child to make choices as to the relevance of the experience to the child's life: "*Anna: Does that fit does that have meaning for me, in what I'm doing and you know who I am"* (Interview / 7.03.07/ Anna and Sam/ Teachers Year Three).

It was noted in the data that the teachers used documentation as a means to make the learning visible through reflecting on and representing in various mediums the experiences provided. The documentation of the learning was an important element of the institutional practice as outlined below by a teacher in an interview.

> Anna: Of course you know the role of the teacher is to stand next to them be there, share, witness, be there and you know record. I don't think anywhere else, you have, you have that opportunity, you know where someone is there documenting your learning, sharing in your learning you know, caring (S-yeah) about your learning, you know. In any, in every other situation, yes, people care about you but they don't necessarily document it or report on it or assess you against something.
>
> (Interview / 7.03.07/ Anna and Sam/ Teachers Year Three)

It was noted in all data analysed that this documentation had several purposes. It acted as a reflection tool for the teachers on their practice (see meeting minutes in the previous chapter); communication with the child's parents (see newsletter in the previous chapter); and, most importantly, a reflection tool for the child to reflect on their learning and to make links to future experiences (see conversations in the previous chapter). Teachers in an interview reflected on the role of documentation.

> Sam: Getting them to reflect and getting them to acknowledge and identify, the learning that has occurred because quite often the learning is it just bypasses them and it, it's not a cognitive process – it's just something that happens and they don't think about it so they don't know they actually learned it. So the teacher I think is there to highlight the learning, when the learning has occurred and you can say hey, you've just, you know, look at
>
> Anna: Help them make links (Sam -yeah)
>
> Sam: What's happened and tell me, you know explain
>
> Anna: What do you think about it?
>
> Sam: What's that, why that's happened (Anna-yeah) and what's the value of that, experience.
>
> (Interview / 7.03.07/ Anna and Sam/ Teachers Year Three)

Analysis of the data found the teachers continually reflected on the perceptions of the children; they questioned the validity of school in the minds of the children and through meta-cognitive reflection helped the children to make connections (see minutes in the previous chapter). The teachers discussed this process in an interview.

> Sam: You know if we're recognising the motivation of school for children and the value that they get out of it. I mean I recognise they need to learn these things but I also recognise that for them it's not important and, and we're, intellectualising it if you like by getting them thinking by you know thinking about thinking and thinking about the processes.
>
> Anna: See a lot of that just comes naturally organically for them (Sam-yeah) they do, thoughts.
>
> Sam: They do, of course they do. But we're making them look at it
>
> (Interview / 7.03.07/ Anna and Sam/ Teachers Year Three)

In the literature review chapter I discussed the Golden Keys Schools. Fleer (2010) remarked on the nature and the process of positioning in these schools. "The Golden Key Schools in Russia of positioning –the teacher and assistant teacher worked together with the children in many different ways – alongside them, above them, below them and as equals in the process of orienting children to their environment" (p. 145).

The role of the teacher in the context researched placed the teacher in varied positions in relation to the child. The role of documenter placed the teacher below the student, with the student leading the process and the aim of the teacher to understand the perspective of the child. The process of reflection through conversations placed the teacher alongside the

children. The process of developer of experiences for the children to engage with placed the teacher above the child provoking possibilities for new learning and development.

The interview excerpt below provides evidence that the parents were aware of the changing role of the teacher from when they were at school, from dealing with the transmission of facts to being a co- learner. One reason they gave for this change was the awareness that the amount of knowledge in the world is growing exponentially and children need to engage purposefully with the knowledge.

> Parent: Like (a parent) was saying about being the co learner that you know that they're (not) this empty thing that the teacher needs to pour everything in. (Parent's: Yeah)
>
> Parent: Like we were when we were at school.
>
> Parent: Exactly. (Parent: yeah)
>
> Parent: That's how you were taught these are the facts write them down and learn them. (Parents: yeah)
>
> Parent: And then the lessons over.
>
> Parent: Exactly. (Parent: yeah)
>
> Parent1: in any case what is an important fact simply because not everyone knows everything around the world (Parent: No) – no question about it.
>
> (Interview/19.04.07/ Parents)

Analysis of the data found the role of facilitator was seen as a new facet of the teacher's role, empowering children, developing life-long learning skills and providing encouragement along the way. Parents discussed this perspective as shown in the interview below.

> Parent: It's not the, stand up at the front like… they gave information and you had to write it down and you had to learn it and then, that was it, … the facilitator … Yeah they are the go-between knowledge and, ah, child's education.
>
> Parent: What's so important is that the children are allowed to ask questions (Parent: mm) as many as they want that's what they want them to do (Parent: mm that's right?)
>
> Parent: And so in that situation it's not about giving the answer it's about him being empowered and being (Parent: that's right) enabled, (Parent: mm, mm) to know where to go, (Parent: yeah) to get that information for himself. (Parent: yeah and)
>
> Parent: that is a skill
>
> Parent: that's a life-long skill.
>
> Parent: Yeah it is it's a life-long skill.
>
> Parent: The school here sort of, is based on that (Parent: mm) (P: And encouragement so much) and encouragement. Absolutely.
>
> (Interview/19.04.07/ Parents)

This example from the parent interviews indicates the awareness that parents had of the role of the teacher needing to change to that of a *co-learner* with the children, involving the *empowering* and *enabling* of children. The data also showed that the practices of the institution were changing and in turn changing society's perspective of the role of the institution, as evidenced by the changing parental understanding about the role of the teacher.

7.3.1.3 Collaborative teaching.

In the analysis of the data it was found that participation of teachers was enacted through team teaching. The concept of collaborative teaching was seen as an important element in building a learning community, with the modelling of collaborative behaviours by the teachers. For example a teacher reflected on this concept in an interview.

> I think one of the unique things that I'm realising about our school is the concept of building a learning community. So it's not just about teacher imparting to a large group of children, talking to you individually. As a teacher it's about creating a, trying to create some kind of structure where there's a dynamic between all different players in the community and I guess that's part of the team teaching thing as well. It's that it's not a one, one person one adult kind of trying to dispense to a group of children.
> (Interview/ 27.02.07/ Gemma/ Teacher Year Three)

As was shown in the previous chapter a team of teachers used continuous reflection on practice to inform future practice and they used documentation of student voices through a variety of mediums (see previous chapter for examples including, art work, film, conversations, writing of scripts). Collaborative planning time also involved reflecting on parent involvement and student well-being (see minutes of meetings in the previous chapter). An interpersonal analysis shown in Chapter 6 found that the inquiry-based projects were planned and tracked through team meetings. The work program was planned collaboratively between the three teachers. It consisted of entry responsibilities of the children for completing their learning journey documents, signing in and communication from home, a daily fitness program, learning agreement time and workshops to develop skills needed for investigations as well as several discussions each week. It was noted that teachers were released for one and a half hours per week for team planning and met on a needs basis throughout the week, during

breaks and before and after school. These were important structural and theoretical elements for the school as noted constantly throughout the analysis.

The planning strategies developed by the teachers constantly reflect on the relevant context of the children and the desire to engage the children in the learning experiences developed. This approach resonates with Hedegaard and Chaiklin's (2005) *Radical Local Teaching and Learning* approach (Refer Section 3.5.7), where:

> The developmental teaching-learning approach developed by El'konin and Davydov did not conceptualise sufficiently the children's cultural background and local historical conditions, even if these aspects are generally recognised within the theoretical tradition as significant. …We believe this theoretical tradition, given its grounding in cultural-historical tradition, can be elaborated to integrate these aspects, so that cultural and social conditions and motive development can be addressed explicitly in the planning process in the content of the teaching. The elaborated theoretical perspective provides a coherent general perspective for conceptualising processes of learning and teaching in the role of knowledge in children's development. (p. 13)

An analysis of how teachers worked together showed that teachers worked collaboratively, in ongoing dialogue and reflection and deliberately planned to embrace the perspective above that "cultural and social conditions and motive development can be addressed explicitly in the planning process in the content of the teaching" (Hedegaard & Chaiklin. 2005, p. 13). The ongoing dialogue of the teachers permitted them to analyse the content used to enact the planning, and to develop learning experiences with the aim of connecting to the children's *cultural and social conditions*, leading to *motive development.* This approach led to the children actively participating in and co-constructing their learning, enabling the potential for

new concept development and having an impact on the children's perceptions of and participation in their current and future lives.

7.3.1.4 Parent role.

A teacher in the interview discussed the perceived role of parents as one of providing a *stimulating learning environment* and a *caring, stable, supportive environment.*

> I see the parent's role as, I guess I'm thinking if you if you're trying to create a learning environment that's productive for learners then school and home is a part of the broader learning environment kind of like the big schema of the learners' world, so I guess a parent's role and the teacher's role is to continue to provide a stimulating learning environment for children, and I guess at home that might look more like including a child in the experiences that are stimulating, engaging them in conversation but also probably more importantly providing them with a nurturing – caring, stable, supportive environment, because we know that if you're emotionally stressed out, psychologically distressed, then you can't learn so I guess I think that that's a really baseline, important role of a parent.
>
> (Interview/ 27.02.07/ Gemma/ Teacher Year Three)

An excerpt from a parent interview provides evidence the parents saw their role as aligned to the new role of the teacher as a co learner and facilitator of the children's learning.

> The important thing there that I would consider is that – ah – both have to be willing (Parent: yes) to learn. (Parent: Mm I agree) Explore and you know do that with our children too: well if you can't find it where do you think?, let's go and look for it. So, nowadays the facilities are there.
>
> Parent: So basically you as a parent you're acting like in a like, being in a teacher's role (Parent1: mm) because the teacher is meant to encourage and facilitate and help facilitate the child to learn the information or get the information from where,

wherever.

(Interview/19.04.07/ Parent)

Teachers shared this perspective as indicated in the following interview excerpt:

> Anna: I see my role as a parent is very much linked to my role as a teacher, and I think that if I'm going it's very hard to delineate those two things, but my role as a parent is to support, the education that I've chosen for them in whatever context, that is. To support my child in their role as a learner, to be independent to take responsibility, to be passionate to make mistakes – all those things. I think the role of the parent is be involved, take an interest and be involved.
>
> (Interview/ 7.03.07/ Anna and Sam/ Teachers Year Three)

A section from an interview shows that parents also saw the child's perception of them as learners as an important aspect of their role.

> Parent: Something I think is important, in the role in any of the three of them (Parent, Teacher, Child) is to show that, that we all love learning, (Parent: mm)… with parents I mean I like to show the children that, or my children that we all like to learn. …and it's not restricted to schools, in the classroom (Parent-or an age) …
>
> Parent: that learning happens all the time it's involved in.
>
> (Interview/19.03.07/ Parent)

The analysis of the overall data noted that the role of the parents was to "provide a stimulating learning environment for children, engaging them in conversation and help[ing to] facilitate the child to learn" (Interview/ 19.03.07/Parent). A key element of this process was to support the child in making a connection between their scientific knowledge development within the institution and the development and use of this knowledge in their everyday life (Vygotsky, 1987a). Analysis of the data indicated also that the role of the parent was important in regard

to the concept of pereizhivanie (Vygotsky, 1994). The parent was seen as able to support the child in linking their emotion with their intellect.

> To support my child in their role as a learner, to be independent, to take responsibility, to be passionate; to make mistakes all those things. I think the role of the parent is be involved, take an interest and be involved.
>
> (Interview/19.03.07/ Parent)

Another aspect of the parent's role is seen as providing additional experiences for their child. A parent interviewed explained how the child's reaction to these shared experiences highlights the importance to the child's motive, developed through the engagement of the parent in the shared learning.

> Parent: my son's interested in the brain so I will go to the butcher and buy a brain (yeah, yeah) and so I know that I can tell that he's getting the learning and he knows even though we don't talk about it but we all love learning about these things. I get more excited about it than they do. (Laughter)
>
> (Interview/19.03.07/ Parent 4)

Teachers interviewed also noted they looked to the parents for support of the goals of the school and for the parents' trust in the teacher to achieve those goals.

> Sam: Parents ultimately make the choice, where the child is going to be you know going to school and what, whatever that school has to offer and if you make if you make that decision then you really need to support it.
>
> Anna: Because you've chosen for your child to be at this particular school then you, part of your role is to build that relationship with, trusting relationship with the teachers if the teacher knows, (Sam-yep) or has, the learner's best interests in mind educationally, socially, emotionally.
>
> (Interview / 7.03.07/ Anna and Sam/ Teachers Year Three)

Analysis of the overall data found that both parents and teachers saw the alignment of the roles of parents and teachers as actively positioning the child as an engaged learner, and provoking new learning through providing experiences that are shared by parents, teachers and children.

The data introduced in this section of the chapter show the embedded structure of participant roles within the institution, which enabled the active participation of the children, teachers and parents. Children were given the opportunity to have an active position in their learning through the demands placed upon them by the principles underpinning the institution and the demands placed upon them by the people engaged with them in the institution. The role of the child was underpinned by the perspective that the child's voice was valued and actively sought in the development of the learning community and the child's individual learning journey, as well as the development of research based projects. The place that the children occupied in this institution was one which valued and encouraged their participation within the system of social relationships, which differed from the historically traditional demands of a student to be a passive participant

The study found that teacher's role had many dimensions; at its core was that of researcher, seeking to provide the most relevant learning for the cohort of children they were currently working with through on-going dialogue, documenting the learning for reflection and examination of processes and possibilities for future learning and reflection on the theory underpinning their practice. The process was one of conceptually engaging the children in activities beyond what they could do on their own and to connect the children's learning and development to the society in which they participated. It involved providing experiences for the child to engage with, mediating their learning through connecting with prior experiences and motives, and provoking the development of new psychological functions. The role of the

teacher in the context researched placed the teachers in varied positions in relation to the child; they worked alongside, above, below the children and as equals in the process of orienting children to their environment.

The roles of parents and teachers were aligned to engage with the child as a learner and to provoke new learning through providing shared experiences and sharing in the child's reflection on their learning. Communication between these participants was an important element that enabled these roles to be enacted.

7.3.2 Communication processes.

An analysis of the data revealed that communication between the teacher and the child was authentic and immediate (Teacher Anna) and was based on establishing the relationship and developing the relationship and through the establishing of that relationship, you also establish expectations. Then because of the positive relationship that has evolved, I think then the student, tries to, reach those expectations (Teacher Sam). Valuing the child's learning through documentation of that learning was seen as a strong form of communication with the child. "When we document it or we work together to display it, or share it, with someone else, that's how we communicate" (Interview / 7.03.07/ Anna and Sam/ Teachers Year Three).

Communication between the parents and the teachers took various forms, through documentation displays in the room, through portfolios, through informal and formal messages, through the diaries, newsletters, afternoon teas for discussions, open nights, portfolio nights and presentations at the end of a project.

Communication between the parents and the teachers was a priority for the teachers. As discussed during an interview with Anna (Teacher), "At *the beginning of the year we*

definitely make the room welcoming; we address the parents, we welcome them into, into the learning community…" (Interview / 7.03.07/ Anna and Sam/ Teachers Year Three.

It was found that one aspect of communication that was a challenge for children was home learning, as is evident in an example from an interview.

> Trying to communicate explicitly and formally between home and school about home learning expectations, that's been a huge struggle, too, and last year I tried something new again which was kind of like a fortnightly home learning update where we kind of put on there, things that were possibilities to do at home but also things that we wanted to happen at home and be brought in for a particular workshop or a particular experience at school, and then attached bits that might be helpful like, you know, maths problem solvers or those kind of things. And, I sort of felt like that routine of having a fortnightly update that kind of said what had been going on and what could be supported at home, was probably the closest in terms of formal home learning, communication. Parent expectation [is] that there will be homework and we've learnt from bitter experience that if we don't provide stuff then the parents are getting their children, putting pressure on their children, getting their children to do very inappropriate homework that's undermining what we're trying to build up in them at school. Like you know getting them to do screeds and screeds of vertical addition or subtraction and multiplication when they don't actually have a concept of what multiplication is.
>
> (Interview/ 27.02.07/ Gemma/ Teacher Year Three)

Content analysis of children's portfolios indicated that they are primarily a collection of artefacts, evidence of student learning in the areas of English and mathematical understandings, individual and collaborative inquiry projects. It was found that portfolios were passed on from year to year throughout the seven-year journey at the school. A parent reflects on the Portfolios:

> Parent: I think they're wonderful actually because they give you a good overview of what the child's been achieving.
>
> Parent: You can see it like from Prep, portfolios start at Prep (Parent: hmm, hmm) see their writing or (Parent: mm) or spelling or even drawing, you see the contrast like all the (Parent: improvements) yeah. (Parent: The development) Yeah impact. (Interview/19.04.07/ Parent)
>
> Parent: Yeah it's a reflection document I think and a pride document self-esteem building.
>
> Parent: See learning in the past, as well (Parent-yeah) where they are now.
> (Interview/19.03.07/ Parent)

Newsletters were produced each week. For instance, in one week a whole school publication shared the learning of the community across the school and in the second week learning was shared from the learning complex. Parents reflected on the newsletters.

> Parent: I like yeah I like the news the newsletters that we get, I like the input that children do have into the newsletters … what do you want to say to parents what do you want to tell the community, should we add this should we add that. You have got the time frame to do it though it's not airy-fairy, having something, concrete in what you want to celebrate.
>
> Parent: Yes, yes and they're very informative (Parent: they are) the newsletters.
> (Interview/19.04.07/ Parent)

Diaries were also noted as a daily means of communication between home and school. Parents reflected on the use of diaries.

> Parent: I actually really value the diaries. (Parent-yeah) Because (Child's name) can communicate in that and so can I (Parent-yeah) and so does the teacher so it's a three

way thing. (Parent-yeah)

(Interview/19.03.07/ Parent)

An analysis of the Field Notes showed that students led the whole school assemblies, sharing the learning journey of their community. Parents reflected on the confidence this built in the children and relate it to their own experience.

> Parent: I like how they, they have the year level Assembly which (Parent: yeah that celebration) yeah really sort of helps them along.
>
> Parent: I think it builds up presentation skills because I didn't do that till high school and I was terrified. (Parent: yeah, yeah) And then when I needed to do it for my work situation, I really had to learn that skill but if you can do it from Prep (Parent: yes) how much better are they going to be as adults (Parent: mm)?
>
> Parent: Yeah and especially when it comes to job applications, job interviews
>
> Parent: Yeah well just presenting yourself, (Parent: yeah) whether it's presenting your case in a job interview or in the community I think you're going to be, better equipped than, for doing it, so again it's a, it's sort of a, a life-long (Parent: yeah) skill.
>
> (Interview/19.04.07/ Parent)

It was evident that the communication between school and home was a valuable link in the children's connection between the learning that happens at school and their everyday learning. Moreover, it facilitated the transference opportunities between these two forms of learning. The three-way partnership between, child, parent and teacher provided a secure environment for the participants to engage in, supporting the links between affect and intellect for the child's development. Frequent and effective communication between the parent, teacher and child was a key aspect of this process.

7.3.3 Institutional practices: sources of learning.

It was found in the analysis of the data aligned with *Radical Local Teaching and Learning Theory,* that the sources of learning available to the children within the researched institution were not isolated experiences but created a dynamic social situation for development, which was responsive to an ever-evolving understanding of the child as active learner engaged in seeking meaning about participation in the child's society (Hedegaard & Chaiklin 2005). Learning and development of children is shaped by the ways of thinking and experiences that are available in particular social situations and, once taken into existing personal schema, these ways of thinking are externalised and revealed in actions within those social situations. Here the *social situation of development* mediates the ideas that are valued in it and allows certain kinds of action, but also allows the social situation to be shaped by the actions that individuals take in it developing the culture as a collaborative process (Bozhovich 2009).

Analysis of data through an institutional lens noted that sources of learning enabled meaningful participation and placed demands on teachers, children and parents for engaging in such activity. This was achieved through the connection of the *forms of thinking* and *the content of thinking* by the participants as theorised by Vygotsky and applied by Hedegaard and Chaiklin in Radical Local Theory of Teaching and Learning (refer Section 3.5.7),

> Vygotsky emphasized the inseparability of forms of thinking from the content of thinking. This view stands in contrast to many researchers who tend to view the form and content of concepts as separate. This common review arises, according to Vygotsky, from a belief that content is culturally developed, and socially and historically determined, while thinking forms are biological processes determined by organic maturation, running parallel to the brain's organic development. In Vygotsky's view, the forms of thinking are also cultural accomplishments, developed as part of thinking with particular contents. Thus, the interdependence between form and content

> characterizes both historical evolution of mankind and the development of a single person (Scribner, 1985; Vygotsky 1930/ 1990a p. 42). (Hedegaard & Chaiklin, 2005, p. 35)

The data presented in the previous chapter, analysed through an institutional lens, demonstrate that the content used is selected to enable the presentation of meaningful contexts, for the children to engage in forms of thinking that will lead to new psychological development. This has required the development of new teaching methods and the adaptation of traditional teaching methods to connect both the forms and the content of thinking. This approach contrasts to traditional teaching methods, which are often based on empirical knowledge.

> Empirical knowledge is reflected in abstract concepts that are attained through observation, description, classification and quantification (Bruner, Goodnow and Austin, 1956; Davydov, 1988,1972/1990; Gagne, 1996). (Hedegaard & Chaiklin, 2005, p. 53)

> When school teaching is organized around empirical knowledge, then methods of investigation and subject matter content are not usually taught together. Subject matter can be differentiated into skill subjects (reading, writing, mathematics) and content subjects (history, geography, biology). The skills subjects are then usually taught as 'paradigms' without caring about the content, while the content subjects can be presented as lectures to be heard and remembered without caring about the skill aspects (Davydov & Markova 1983; Lompscher, 1985). If instruction is based only on empirical knowledge it will orient pupils to acquire concepts from different subject domains that are not related to each other or to their local life world. (Hedegaard & Chaiklin, 2005, p. 53)

The data outlined in the previous section, analysed through an institutional lens, demonstrated that empirical knowledge is an important aspect of children's development of new concepts (i.e., knowledge of the physical world), however it always needed to be presented in

meaningful connection to content relevant to the lives of the children and the context in which they lived. This base empirical knowledge was then able to be used to develop narrative knowledge.

> Bruner is the main proponent of formulating the epistemological characteristics of narrative knowledge and thinking. The key characteristics of narrative knowledge are; (a) changeableness in intentions, (b) possible mutual perspectives and goals which interact and (c) involvement of feelings and emotions. (Bruner, 1986 pp. 16-25) (Hedegaard & Chaiklin, 2005, p. 54)

The data demonstrated that the children and the teachers developed mutual perspectives and goals on the content being explored. The children were connected to the concept of 'Values' and 'Sustainability' involving the ongoing exploration of feelings and emotions. Engagement of the children in narrative knowledge provided a connection and engagement in the learning, furnishing opportunities for the development of theoretical knowledge,

> this kind of knowledge can be conceptualized as 'mental tools' in the form of theories and models of subject matter areas that can be used to understand and explain events and situations (concrete life activities) and to organize actions. (Hedegaard & Chaiklin, 2005, p. 54)

Theoretical knowledge, or the development of 'mental tools', can then be transferred to new contexts to enable exploration of new experiences and to act within these contexts.

Hedegaard 2012 states:

> From the perspective of a child's social situation of development it is how the child experiences the activity emotionally and acts in the situation, whereas from the institution's perspective it is how the activity takes place in recurrent activity settings. This dialectic is the key to understanding the dynamic of a specific child's learning and

> development through participating in a specific practice. Motive development can then be seen as a movement initiated by the child's emotional experience relayed to the activity setting. To catch this movement, the tradition of practice within which a person's activities takes place has to be analysed as encompassing activity settings that contain recurrent demands for activities. (p. 21)

Analysis of the data showed a *movement* was achieved as a result of the institutional practices whereby the methods of teaching involved the organisation of *encompassing activity settings that contained recurrent demands for activity* which valued *how the child experienced the activity emotionally.* This dialectic provided the understanding of *the dynamic of a specific child's learning and development when participating in specific practices*. *Motive development,* demonstrated as a *movement initiated by the activity setting related to a child's emotional experience,* was enacted through an inquiry project based learning model within the institution.

7.3.3.1 Inquiry project based learning.

Analysis of the data noted that inquiry project learning formed the basis of the curriculum. Each project was based on one of the school's big ideas of identity, sustainability and interdependence. (Appendix 3 – Big Ideas) The concepts that were to be explored were determined through discussion within the community. After exploring pre-existing theories and understandings, possibilities for research were explored. A question or theories were determined and researched. The learning was then made visible and shared with the wider community. Document (11/06) analysis and findings of the previous chapter show that in 2006 the school's Arts Festival became the venue to share the Year Three community's research, including their Earth as art panels, an environment campaign and Identity Show. The environment campaign's goal was to educate other people and develop their concern for the

environment. As part of this campaign students came up with the idea of a show-bag to give out at the school's Arts Festival that included badges, magnets, stickers and posters. (11/06) The identity show was a series of films, exploring issues related to social interactions of the children.

It was found that an inquiry approach enabled the children to make conscious links between their learning at school and the contexts in which they lived, thus connecting and developing both their everyday knowledge and scientific knowledge. The importance of this lies in the belief that, "The strength of scientific concepts, compared to everyday concepts, is that children learn to work consciously with the logical relations defined by the concept." (Hedegaard & Chaiklin, 2005, p. 36) The children consciously discussed and explored the key concepts impacting on their interactions with the world around them. This approach is aligned to Hedegaard and Chaiklin's (2005) Radical Local Theory of Teaching and Learning point of view:

> Children's conceptual development in Vygotsky's analysis is characterized by an increase in complexity of knowledge about the relations between concrete and abstract aspects of a subject domain. From a radical-local point of view, the potential meeting between everyday and scientific subject-matter concepts gives the possibility for children to develop more systematic, analytic understanding of the issues, conditions and problems that are present in their living conditions. Teaching should aim at developing the ability to work with these relations. In developing this ability the child becomes able to use the learned subject matter content as tools for analyzing and reflecting on everyday local activities. The abstract aspects help the child to relate local events with possible events. (p. 36)

The following extract shows how inquiry based learning formed the basis of the curriculum. It took the format of collaborative research projects as well as individual and small group investigations. Key learning areas are linked to the inquiry learning.

> I'm thinking about layers of complexity here cause I guess I'm thinking at the biggest layer, most outer layer project based learning or enquiry base learning or incentive learning – those kind of constructs I think have been really helpful methods [of learning], and really prominent. And what they've done I think has provided a framework or a structure for figuring out which directions to go in creating a learning environment. I guess sort of steering the learners because there's just so many possibilities with an environment with, somewhere between 45 and you know 50 something learners that if there's no structure for how that's going to work then what we found is that we just shoot off in so many directions that the depth is lost. So I think having those projects or focuses has been a really critical method for taking away the teachers' "I'm telling you what to do" but still having a framework where the teacher is guiding or holding onto some sense of direction of where the overall class is going.
>
> (Interview/ 27.02.07/ Gemma/ Teacher Year Three)

The inquiry approach provided a framework or a structure for figuring out which directions to go in creating a learning environment. The approach emphasized the inseparability of forms of thinking from the content of thinking as posited by Vygotsky. The approach created a dialectic within the child's social situation of development. This involved how the child experienced the activity emotionally and how they connected with the experiences and from the institution's perspective, how the activity took place in recurrent activity settings. The sources of learning within the inquiry approach were:

- Community meetings
- Learning journey documents

- Workshops
- Learning agreement time
- Targeted teaching
- Provocations

7.3.3.2 Community meeting.

Community meetings were held on a needs basis, involving all teachers and children. The goal of the meetings was to create a "*reflection time trying to build into our learning community reflecting on what we're learning and sharing what we're learning"* (Interview /27.02.07/ Gemma / Teacher Year Three). Both children and teachers raised points for discussion in these meetings. The community meetings were a key element in developing a *Community of learners* (Brown & Campione, 1990, 1994) with the aim of the children feeling connected to their learning, being co-creators of the learning environment, and taking responsibility for their own behaviour in connection with the knowledge and skills they would acquire. This process was also enacted through individual learning journey documents.

7.3.3.3 Learning journey documents.

Analysis of the learning journey documents revealed their purpose of tracing the individual journey of each child, which was developed through a three-way partnership between, child, parent and teacher. Through analysis of classroom observations it was noted in the junior grades that this document was developed at the start of the day and reflected upon at the end of learning agreement time. In the middle and senior grades it was developed through conferencing time when the home teacher met one on one with the child, "*where they sit and they go through their learning journey with the teacher and they set up some goals"* (Interview/19.04.07/ Parent).

An interview excerpt below shows that teachers saw the document as a key communication tool with the children, and served to collaboratively evaluate how they were feeling about their learning, what they had achieved and where to proceed next.

> There's a really crucial role of the communication at an individual level I guess, both personally how you're going kind of stuff, but also engaging children with where they're at in their learning journey, and one of the key ways I guess we communicate and deal with that is through learning journeys and then monitoring and reflecting on those.
>
> (Interview/ 27.02.07/ Gemma/ Teacher Year Three)

Analysis of the learning journey document indicates it was an important part of supporting the *social situation of development* of the child taking into account the child's emotional and cognitive needs and enabling these to be tracked and see how they were aligned to the institution's practices. The document tracks simultaneously how the children were emotionally connected to the activities through their choices and from the institution's organisational perspective, tracking participation in the activities that were possible for the child. This also involved the dialectic to both engage the children emotionally and provide activities within the child's *zone of proximal development,* provoking cognitive development. The concept of the *social situation of development* is pertinent here. Hedegaard & Chaiklin (2005) state,

> The orientation to be engaged in conceptual learning comes from the social situations of development (Vygotsky, 1933/1988, p. 198). This general theoretical conflict focuses on the contradiction between the demands of the social relations within which a person functions and the present state of their developed psychological capabilities. These capabilities enable a person to be interested in and enter into these social relations, while at the same time being inadequate to meet all the demands and

possibilities of the situation. This inadequacy is a contradiction that creates felicitous conditions for the development of the new psychological functions (p. 36).

Data analysis shows that teaching strategies to support this dialectic included workshops, targeted teaching and learning, and provocations. The intention of the planning of these experiences was to foster the child's emotional connection to the content and purpose of investigation, and at the same time provoke the development of new psychological functions.

7.3.3.4 Workshops.

Workshops were taken by groups of 15 to 25 children and directed by a teacher. The goal of the teacher was to provoke new thinking or develop new strategies in learning. A teacher described it as a form of communication. *"There's the kind of teaching type communication of okay there's something here that I think you're not you don't know or I'd like you to learn more about, that kind of workshopping idea where we're actually kind of giving a bit more of a direct instruction"* (Interview /27.02.07/ Gemma / Teacher Year Three).

7.3.3.5 Target teaching and learning.

Targeted teaching sessions were taken by a group of three to twelve children, guided by a teacher with the goal of developing a new skill or knowledge, which was applied to an authentic learning task. Target teaching is a strategy to provide children with necessary skills and supporting information on a need-to-know basis, so as to use these new skills and knowledge in relevant purposeful learning situations. In this study, target teaching sessions often involved the children sharing strategies and current understandings. These were sessions where children felt safe to ask questions and clarify their thinking. Parents reflected on their children's experiences with targeted teaching.

Target teaching's brilliant. (Parent-mm)(Parent-yeah)

I have to say ah, that, when they have a target teaching session, because it's a small group, they're focussing. "I just don't get this (Parent: mm), how can I get it?" And with that small group with the teacher, "well how do you understand it?" So it's actually the children, sort of teaches target teaching the child, it's them all teaching each other. They really showed then, well you learn this way, you learn that way, how did you get that? (Interview/19.03.07/ Parents)

Parent: It really worked for (child's name) to have target teaching.

He sees he's not the only one. (Parent: mm) And then he could hear other people's versions of why and all of a sudden he thought "oh okay what is it?" and he could work out what this was and that he was just one of the kids, and I think (Parent good point) target teaching really works for him to know that he's – he's one of the people, he's one of the kids. (Parent: mm) And yeah and the teacher's just backing off, and listening to the kids I think that really, they all feel valued then, yeah (Interview/19.03.07/ Parents).

7.3.3.6 Provocations.

The relation between institutional practice and its objective and the person's motivated activity within her/his social situation of development can be seen as the core in conceptualisation of the developmental process as self-movement. (Hedegaard, 2012, p. 12)

It was found that the provocations aimed to catch the relations between the demands of the institution and the motives that guide the child's activities, with the outcomes of the child's participation determining the future direction of the inquiry. The examples below show how provocations were used to extend children's thinking about possibilities, leading to the selection of inquiry research projects. These may take many forms, including films, PowerPoint presentations of teacher research, songs, guest speakers, and excursions. Some

examples of provocations from the study follow: excursions, local excursion, poems, videos and installations.

Excursions

It was noted in the data that excursions into the wider community were valued, however restricted due to cost to families. They were connected to the current inquiry or used as a provocation for new learning. An example of this is children attending the 'Earth from Above' exhibition in Federation Square, Melbourne, and also visiting the observation deck of Rialto Tower. The goal of the excursion was to explore bird's eye perspectives of physical environments. To assist student understandings of this view, as a follow up task the children were asked to imagine being a bird or an airplane flying over several different, but quite specific locations. They were asked to draw these locations including as much detail as possible. The locations included a swimming pool, a park, their own house (including garden areas), and either their bedroom or their house with the roof removed. These locations were selected with the presumption that all students would have had some personal experiences with them; they also allowed students their individuality and creativity. The children went on to creative large canvas murals with an artist mentor, which were exhibited at the Arts Festival (Document/ 23.10.06/ documentation).

Local excursions

Local excursions were used wherever possible. An example of this was an excursion to a local creek to examine the wetlands, arranged through Melbourne Water's 'Water Watch', to monitor the quality of the water and find out how much pollution was in the water. Another excursion was to view a government road development project located close to the school.

> We took some interest in the Eastlink Road Project, which is within walking distance of the school. This is a major project happening right in our neighbourhood where humans are having a significant impact on the environment. We observed on Google Earth how animal habitats in our local area had been destroyed. So we walked down to have a look…
>
> (Document/ 09.11.06/ documentation)

In the discussions following the excursion the children judged that the impact on the people living in the area would be exhaust pollution, noise pollution and extra traffic. They believed children would have varying views on living there; some would like the project because it would be easy and quick to get on to the freeway, and some people would not like it because of the pollution (Document/ 31.08.06/ documentation).

Poems

A poem, 'Hands', by Jewel was used as a provocation. In a reflection a teacher outlines the messages children thought were expressed in the poem:

> Each of us can make a difference
>
> Every act of kindness is making a difference
>
> We have to choose to do acts of kindness
>
> We have the power to change our world through our choices
>
> (Document/ 16.4.06/ teacher reflection)

Analysis of the data noted the poem was used to make visible the children's thinking on concepts the teachers wanted them to explore.

Other provocations for the identity project included character analysis, looking at faces, looking at personalities through texts (stories, films, music, role play), issues related to relationships, personal collages, Mandela's, baby photos, photos from different times in life, 'Come as someone else' day, disability day, role plays, masks, body language, narratives, music, installation art work, self portraits, Habits of mind, Life style log, 24 hour diary, three wishes, food diary, and healthy lifestyle – food activities, fitness.

(Document/ 7.03.06/ meeting minutes).

Analysis of the data related to each of these provocations indicate that the teachers' aim was to use the relationship between the demand of the institutional activity and the children's motive to determine connecting points which would lead to the development of new conceptual understandings.

Videos

A teacher documented the key ideas discussed following the viewing of a 'Being Me Video – Belonging' (Document/ 13.04.06/planning documentation).

> Where do you feel like you belong? How do you feel when you are somewhere you feel that you belong. Sometimes you have to make an effort to become part of a group. Strategies for joining a group – don't interrupt a game; introducing yourself, how you speak and act can make a difference. If you're not welcomed into a group don't take it personally. What were some of the reasons for people not allowing people to join a group? Risk-taking. If you want to be a part of anything you have to make a contribution. Leaders and Followers: If everyone leads no one can participate. Leaders guide. Not bossy. Include everyone. Followers support the leaders.
>
> Negotiating. Some people have more knowledge, but everyone has the same responsibility. Give everyone space. Listen and don't butt in. You have to learn WHO

> to trust. How to make a person feel welcome…what were some of the strategies? Judging people – thoughts shared? Can you always include people? Can you always expect to be included?
>
> (Document/ 04.10.06/ documentation)

From the data it was evident that these films provided the provocation for making visible the learning from the 'Identity' research project. The children connected with the medium of film as a means to express their ideas.

Installations

In a planning document a teacher documented the process of an Installation. In an Installation, the group is given a provocation statement to guide and direct them; this provides a common starting ground and students must collaborate through discussion and compromise to achieve a common goal. One example of a provocation was "Twinkle, twinkle, little star, how I wonder what you are?" Students discussed what they might create to reflect that statement and they documented the process and their achievement, on which they were required to reflect. As additional students were added, the group had to bring that person up to speed by sharing what the group had decided and where they were headed (Document/ 14.03.06/ planning documentation).

It was noted in the data that installations led to a major art project for the Arts Festival titled *Earth as Art*. The children, in groups, were asked to represent their chosen environmental issue: deforestation, pollution, drought or urbanization. Skills and ideas about colour, texture, shape/line pattern, primary and secondary colours, harmonising colours, perspective representation were explored - producing an image which represented the way the children saw the issue and the way they felt about it. Four large canvases were used for the project.

This demonstrates the children's achievement of connection to the activity, which led them to taking the experience deeper, and made visible the children's new conceptual understandings.

Provocations are a planning element used to link the child's emotional connection with the content and the goals of the teachers (see Chapter Six, where song and film were used). Provocations are an invitation for the children to engage with a topic. Whether or not the children connect with the provocation indicates to the teachers if they have understood the children's current perceptions of the content and whether the children are functioning within their zone of potential or proximal development (Kravtsova, 2006).

7.3.3.7 Learning agreement.

The field notes show learning agreement time as experiences where the children have a choice in what they do based on the provocations set up in the physical environment and also have the ability to negotiate their own experiences and investigations. A parent reflects, "*(Child's name) always calls that my time, personally her time"* (Interview/ 19.03.07/ Parents).

Examination of planning documents and research notes revealed the setting up of the physical environment as purposeful, functional, comfortable and ascetically pleasing spaces, which was a crucial aspect of learning agreement time. An analysis of the learning spaces showed that in the Year Three complex this involved three rooms, the wet room, the multipurpose room and the quiet room, a design based upon the reflections of one of the teachers involved in a 2005 project when Years 5&6 students designed their classroom with an interior designer as a mentor. It was found that at the beginning of the year the possibilities for learning agreement included: mathematical concepts explored through collaborative games, a sports fitness centre with children recording results for data analysis, art experiences, self-portraits, writing experiences, reflection provocations on clearest holiday memory, clearest Year Two memory,

invitation to parents to meet the teacher, and science experiences involving plant explorations. There were also ICT provocations such as a 3D body adventure, internet research, acid music exploration and the preparation of a digital portfolio.

A parent in an interview described learning agreement time, emphasising the negotiation aspect.

> Learning agreements where they can sit down and decide what area of work they really want to concentrate on themselves and then obviously go to the teacher if they need, help, and then she may direct them say you know go to the library and get a book out on that or have you thought of perhaps getting onto the website or, or whatever, but using all the different tools that they can use to get the information that they need.
> (Interview/19.03.07/ Parents)

This quote highlights the shared understanding of the processes enacted in the institution. Learning agreements enabled a shared process of negotiation of the learning; the parents' understanding of this process enabled the parents to also participate in the shared practice.

7.3.4 Community practices.

Analysis of the data has demonstrated that the learning and development of the children was shaped by the ways of thinking and experiences that were available in particular social situations and, once drawn into the existing personal schema, these ways of thinking were externalised and revealed in actions within these social situations. It is argued by reference to theory that empirical knowledge has been shown to have developed through meaningful connection to content that was relevant to the lives of the children and the context/s in which they lived. It was also connected to narrative knowledge and thinking involving "(a) changeableness in intentions, (b) possible mutual perspectives and goals which interact and (c)

involvement of feelings and emotions" (Bruner (1986) cited by Hedegaard & Chaiklin, 2005, p. 54) as was shown with the data highlighted previously. Theoretical knowledge was shown to have been developed as 'mental tools' in the form of theories and models of questioning and research (in contrast to subject matter as examined by Hedegaard & Chaiklin, 2005) that can be used "to understand and explain events and situations and to organize actions" (p. 54).

Hedegaard (2012, p. 18) states:

> Children's learning and development have to be conceptualised as well as studied by focusing on their activities and the demands they meet in institutional practices. Traditions for practice frame the actual practice but also transcend the actual situated practice and make the practice surpass its situated local realizations.

Practices are conceptualised from their relations to institutional traditions and activities from their relations to children's social situation. From a Cultural-Historical point of view the dynamic of both the person's activity and the practice can be conceptualised as dialectic. The four elements of practice of the institution are outlined below. They underpinned the possible activity of the children enacted through the sources of learning discussed in the previous section. The sources of learning were enacted as interaction strategies and pedagogical practices in the community practice through:

- Collaborative learning
- Active learning experiences
- Reflection on learning
- Assessment as and for learning.

7.3.4.1 Collaborative learning.

Analysis of the data noted that a key element of the inquiry-based learning in the school was collaboration. This involved learning together as a community of learners, as well as from people in the wider community. Key elements of this process are outlined in the following interview excerpts, and comprised learning to work together and developing an attitude of helping others to learn and in turn learning from others.

> I think collaboration has been a prominent – method, so – actually – skilling the children up to know how to work together so that, they can create learning experiences and products of learning or you know visible learning from those collaborations.
> (Interview /27.02.07/ Gemma / Teacher Year Three)

A parent reflected on her child's experiences at two different schools, and how the peer collaboration process had influenced her learning.

> Parent: I like the mentor (role) too because people skills are one of (Child's name) strengths and sometimes, particularly in our old school when you're in a school and you've got to learn it's all about information going in one way, yeah and it's academic and not, I think this school places a lot more emphasis on the interpersonal (Parent-yes) (Parent-hmm, hmm) and that's made a huge difference to (child's name) cause she is more of a people person and that's where her strength is so to know that she can go and help the preps and, and feel good about that.
>
> Parent: She's been helping the Grade Fives too.
>
> Parent: Yeah and well that's moved on but that's self-esteem building and then I think that works two ways in that she can accept help from others (Parent-mm) (Parent-yeah) and not feel she's less because she's accepting help from others.
>
> Parent: And they don't feel threatened if they don't have that knowledge.

Parent: Absolutely

(Interview/19.03.07/ Parent 4).

The analysis of the data established that throughout the collaborative learning processes children were skilled *up to know how to work together* and they had opportunities to *mentor* each other. They also learned that working collaboratively meant they could also *accept help from others* and not *feel threatened if they* didn't *have that knowledge* which they currently required to solve a contextual query. All of these attributes impacted on the children's interactions within their everyday lives as well as within their learning in the institution.

7.3.4.2 Active learning experiences.

In the following example a teacher outlined how learning experiences were provided which involved active participation and expression of the children's thinking using a variety of mediums.

> Certainly like I'm thinking about hands on, the need for, for manipulation of knowledge in terms of working with clay or drawing or moving things around or – constructing a dance or a play or something that kind of engages you in exploring how the learning like what the thinking does in an external sense outside of your thinking and your brain
>
> (Interview /27.02.07/ Gemma / Teacher Year Three).

It was noted in the analysis that engagement in new knowledge, using a variety of mediums and approaches, added to the possible emotional connection of the child to their learning. Connecting their prior learning experiences with new information or skills stimulated engagement in learning, in turn provoking possible development.

7.3.4.3 Reflection on learning.

Reflection on learning took place at all year levels researched. It took multiple forms including group discussions, mind maps, visual and performing arts. The purpose of reflection was to make visible the learning that had occurred, with the goal of informing future learning and supporting the transference of that learning to new situations.

> Parent: Self-reflection. Oh it's fabulous and I've seen it right through from juniors, you know, this small little sessions is great.
>
> (Interview/19.03.07/ Parents)

This example of a quote taken from a parent interview again highlights the understanding of the parents about the processes enacted in the institution, allowing them to connect to the learning and development of their children both within the institution and in their everyday lives.

7.3.4.4 Assessment as and for learning.

> I think learning - is best assessed when the three partners can walk away from a situation and say that that was a valuable experience
>
> (Interview / 7.03.07/ Anna and Sam/ Teachers Year Three).

As reflected in the quote above, teachers saw assessment as an important three-way partnership, involving discussion about the learning that had taken place. Teachers reflected on this process:

> to be able to get feedback from parents and say how do you feel, you know, that your child went or how do you feel this project developed your child or what do you feel your child has benefited from this.
>
> (Interview / 7.03.07/ Anna and Sam/ Teachers Year Three)

> observation and dialogue with the learner – and I guess some kind of visible product.
> (Interview /27.02.07/ Gemma / Teacher Year Three)

Making learning visible was seen as an important part of the process of assessment. This was also noted in the data on assessment related to school beliefs, for example, a teacher reflected on the purpose of assessment aligned with the school's beliefs.

> Western culture standardised testing or some kind of other or examinations and grading. I think they're pretty poor measures of what learning's taken place. I guess I'm just thinking about what thing we're measuring here because learning's such a broad thing that, if we go to our bigger kind of aims of wanting them to become self-motivated learners or life-long learners or those kind of things – empowered to see themselves as learners we were talking about earlier – then you might be looking to observe passion for learning, involvement, excitement, behaviours that demonstrate the ability to seek things out rather than the dependency on someone else to give the knowledge – an openness or willingness to offer ideas, a confidence I guess it's a self-esteem, a confidence, a belief that it's okay to get out there and ask
> (Interview /27.02.07/ Gemma / Teacher Year Three).

Similar findings were noted in the data presented through parent interviews. For instance, the parents saw the importance of assessment as going beyond academic subjects.

> But learning is things that happen all the time but once the children start, once the children start doing what they've been not taught but learned, (Parent: or shown) or shown once they start doing it without the motivation that's true learning cause it's like a permanent change in their way of handling (Parent: mm) self.
> (Interview/19.04.07/ Parents)

Assessment beyond academic subjects was a theme that came up regularly among teachers as noted when a teacher reflected on the perspective stating, "*how it's best assessed (is) if they can use their learning in a different situation, and you can see it happening"* (Interview /

7.03.07/ Anna and Sam/ Teachers Year Three). Assessment as transference describes the process in place, where the children took their learning and transferred the new skills and understandings to new learning situations. This process is congruent with the development by the children of *scientific concept*s, where the children reflected on their practice of the concept and had a conscious awareness of the use of the concept in new applications. They valued adding these to their *everyday concepts* which had previously been used spontaneously, unreflectively and unrelated to any system of concepts.

Assessment of literacy and numeracy is important not only for the child and their parent/s, but also significant for the educational system. Analysis of the data noted that this assessment of these foundation areas had been explored though the development profiles written by the teachers and more recently the outlines of key understandings desired by children at particular year levels and possible observable behaviours aligned with those understandings. Evidence of these was then documented in the child's portfolio. A teacher explained the assessment of reading through an interview and also through making visible what children have learnt from a text.

> For reading it would be an interview so actually discussing with them what they think about reading, how they read, because those attitudinal things tell you not just about what they're doing in terms of decoding but it tells you, I guess it's linked to what I was saying before about a bit a sort of orientation that they have an orientation towards reading and that tells me that therefore they will go on to pursue reading as an activity and that's an important outcome of learning.
>
> I also think sometimes we could demonstrate reading through a product so we've read about all these you know things to do with – well like last year we had some book clubs. A group read about space and stuff they'd learnt in space and then they decided they'd write a play and their first attempt was appalling and we said but that doesn't

> demonstrate anything that you've learnt from what you've read. This task is not just to do with a play just an entertaining play but the goals of this task was to demonstrate what you'd learnt, through your reading in a way that would stimulate your audience so, what can you show them as they worked through it scaffolded in a second attempt they demonstrated amazing things about what they'd read about what they'd learnt.
>
> (Interview /27.02.07/ Gemma / Teacher Year Three)

7.3.5 Summary.

In this section the processes used to enact the educational program are outlined. When the data were examined through an institutional lens it was possible to note the apparent sources of learning and institutional practices that underpinned these experiences.

It was found that the sources of learning and their development were organised so that they engaged the participants in a social and meaningful situation. The learning and development of children was shaped by the ways of thinking and concepts that are available in the social situation. The goal, as outlined in the previous section, where the two inquiry projects of 'Identity' and 'Sustainability' were explored, was for the child to take into their existing personal schema ways of thinking which would be externalised and revealed in actions within those social situations. The social situation of development, mediated the ideas that were valued and allowed certain kinds of action, however it was found that this also allowed the social situation to be shaped by the actions that individuals took, developing the culture as a collaborative process. The methods of teaching promoted the development of empirical, narrative and theoretical knowledge. It was found that collaboration between teachers and children was effected through a range of structures and strategies: inquiry project based learning, community meetings, learning journey documents, workshops, learning agreement time, targeted teaching and provocations. The sources of learning were enacted through the

institutional practices of: collaborative learning, active learning experiences, reflection on learning and assessment as and for learning.

Figure 7.1 outlines the findings that three institutional aspects, namely, participant structures, pedagogical concepts and pedagogical practices, each contributed to and provoked the activity of the child. The institutional elements were developed through the interactions and beliefs of the community within a specific culture and context enacted according to the concepts of a community of learners, a community of practice and contextual cultural research. The institutional aspects enabled the interpersonal interactions, which in turn enabled personal aspects of development, motivation and learning relevant to the lives of the children, and led also to the development of the institution, enabling transformational learning.

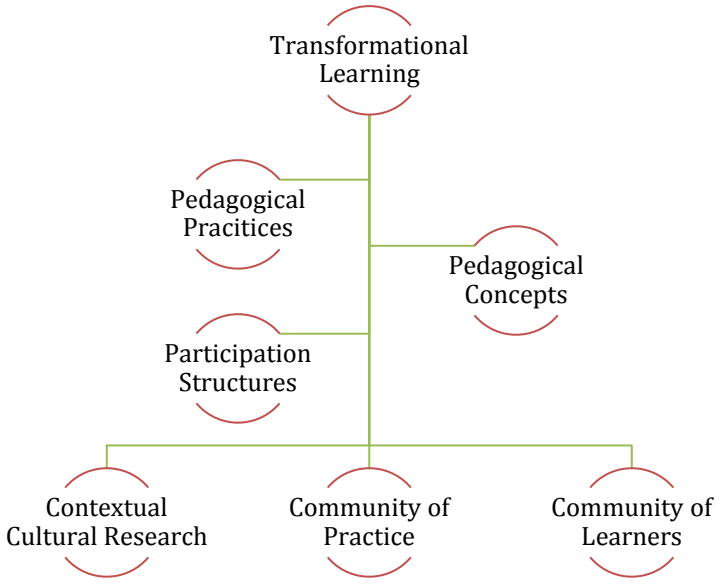

Figure 7.1. Institutional aspects.

In the next section data in relation to transformational learning promoting personal development are examined through identifying the movement from a crisis in perceptions enabling *potential development*, to the *zone of proximal development* within which interactions

with a more capable other, or cultural tools, can lead to development. In this study, the relevant learning resulting from this process impacted on the *double move* between scientific concept development and everyday concept development and motivation for learning based on a need for learning, provoking motive which encouraged further activity, the result of which met the needs of the learners.

7.4 A Personal Lens Perspective

Through a personal lens perspective the data is now analysed to examine the conditions that enable a child's actual development. Analysis of the data indicated the key elements were: purpose of activity, relevance of the activity to current understandings, and motive of the child to engage in the activities.

Vygotsky as discussed in Section 2.3.4, saw instruction though participation in cultural practices as a means to eliciting new psychological development. As previously discussed, function in the child's development is explored first in a social context – interpsychological functions – and then at an individual level – an intrapsychological functions. The development of new psychological functions is integrated into the child's system of concepts when relevance is recognised. Concepts form on two levels: everyday concepts develop spontaneously, whereas scientific concepts develop consciously. Both are associated with different forms of instruction and motivation. When a child identifies a point of conflict in their understanding of concepts related to interpretation of the world the child moves into a *zone of potential development* where the potential for development is enabled. When children move into and work within their *zone of proximal development*, psychological functions awaken within the child and can be developed through participation with a more capable other. When the *social situation of development* is enacted, where the external and internal

conditions are in unity, actual development occurs, enabling the new concepts or psychological function to be integrated into or to challenge the existing system of concepts.

7.4.1 Children's intrapsychological functioning development.

> What they learn here takes them through life.
>
> (Interview/19.03.07/ Parent)

7.4.1.1 Purpose of activity.

Analysis of data found purpose to be at the core of all experiences encountered by the children, involving the children recognising the purpose and relevance of their learning to their lives and the participation provoking new psychological development. Vygotsky describes this process as the development of self:

> A young person's acquisition of conceptual systems that relate to the social, societal and political aspects enables the young person to become conscious of the societal ideologies and of himself as a person in society (i.e., his self-consciousness develops) (Vygotsky, 1931 /1998, p. 42). Through this process children come to acquire historically produced societal knowledge. (Hedegaard & Chaiklin, 2005, p. 37)

The following quote from a teacher interview shows how the learning environment valued the life of the child beyond the school and aimed to connect the child's life at school with their life outside of school.

> I think a positive level we're recognising that so much of the learning that a child does happens outside of school and we want to try and bring that into the school context to create an environment where there is stimulation that isn't just within the walls of the school
>
> (Interview /27.02.07/ Gemma / Teacher Year Three).

This perspective aligns with Fleer (2010) who states that, "When everyday learning and schooled learning are kept separate children do not gain insights into how different forms of learning are connected" (p.14). The concepts of scientific and everyday concepts are once again important here (see Section 2.3.3). Fleer (2010) clarifies these:

> Vygotsky (1987a) argued that everyday contexts lay important foundations for learning scientific or school based academic concepts. Developing everyday concepts in the context of children's everyday world is important for living, but it is also important for making sense of scientific ideas. Everyday experiences and the concepts that are learned through these experiences lay important foundations for scientific learning, in the same way as scientific concepts learned at school pave the way for thinking differently about everyday concepts. However these two processes must be related. Thinking consciously about scientific concepts whilst in an everyday context where important everyday concepts have been learned, sets up an opportunity for transforming everyday practice. (p. 12)

In the pedagogical practices outlined in the previous section, the teachers were continually linking the concepts under investigation to meaningful life experiences of the children, enabling the teachers to provoke the development of theoretical understanding, which in turn enhanced the children's everyday concepts of their world, creating an authentic purpose for the learning. Hedegaard and Chaiklin (2005) state, "The goal of radical-local teaching is that pupils appropriate academic knowledge so that it becomes personal knowledge that is used in relation to the community and other everyday arenas"(p. 52). For example, the data analysis in the previous chapter of the *Values* and *Sustainability* projects demonstrates that the goal of the teachers was for the academic knowledge to become personal knowledge, used to enhance the child's participation in the society in which they live.

7.4.1.2 Relevance.

In designing pedagogical programs to provoke student learning and development, an understanding is necessary of a cultural historical perspective of child development, including Vygotsky's concept of *zone of proximal development*. This needs to be understood and responded to, and examined through the relevance of the learning to the individual child within the community of learners. As previously stated and defined (see Chapter Two) the concept called *obshchenie* in Russian, as discussed previously, explains the dialectical conception of development and learning.

As was shown in Chapter Six the learning community at the school valued collaboration highly, and within that perspective, valued what each individual brought to the learning environment, including perspectives and knowledge. Interviews with teachers and also with a parent supported this finding.

> The central role I see of the teacher in terms of learners is to facilitate their learning. So it's about creating environments, which allow children to learn in ways that are best for them, that are most empowering for them, that are most engaging or supportive of where they come from and what they bring and where they're going.
>
> (Interview /27.02.07/ Gemma / Teacher Year Three)

> Well it's just about, you know, having all different ways to engage the children at their, their point and then giving opportunities for them to extend it, you know, that's open ended.
>
> (Interview / 7.03.07/ Anna and Sam/ Teachers Year Three)

> One thing I noticed so many cultures in their classes, each child (Parent: mm) is recognised and valued, and that's, that's why I want, you know, my child to be here, she accepts everyone and they all add, add their differences but they're all accepted

(Parent: mm) and I think that is very valuable.

(Interview/19.03.07/ Parents)

The statement of being *supportive of where they come from and what they bring and where they're going to*, outlines a need to understand the child's development from a cultural historical perspective. Bozhovich (2009,see also Section 2.3.3) states,

> Child mental development is a complex process that cannot be understood without analysis not only of those objective conditions influencing children but also features that have already taken shape in their minds and through which the influence of these conditions is refracted. (p. 60)

The concept of *empowering* and e*ngaging* children aligns with what Bozhovich (2009) states: "Child mental development has its own internal logic, its own law, and is not a passive reflection of the reality within which this development takes place" (p. 60). The teachers in this study were aware of the need to connect with what the children was bringing to the learning situation and also to connect to the learning needs of the child, which are in turn connected to the child's journey of development. The findings indicate that educators need to understand that, "Child development is not a quantitative increase in what the child already had, but a qualitative translation from one form to another" (Bozhovich, 2009, p. 61). This is congruent with the theoretical conception of development outlined in the theoretical framework (Section 2.3.1). El'konin (1971) explains:

> Vygotsky concludes his description of the basic features of transitional periods in development as follows: Thus we see unveiled before us a perfectly regular and distinct pattern, full of the most profound meaning. Ages of stability are interrupted by ages of crisis. And these latter are the breaks and turning points in development, again confirming the thesis that the development of the child is a dialectical process, a

> process in which the transition from one stage to the next occurs not through evolution, but through revolution (p. 542) …
>
> In accordance with this we might say that each stage of mental development is characterised by one dominant relationship of the child to his environment, by one dominant activity within that given stage. The indication of a transition from one stage to another is precisely a shift in the dominant type of activity, the dominant relationship of the child to his surroundings. (p. 544)

The concept of the impact of children's stages of development on pedagogical practice will be explored further in the next chapter, which looks at inquiry learning with 5-year-old children and 11 year old children within the institution.

Determining the *zone of proximal development* for the child is an important element in pedagogical planning and was defined in Section 2.3.6 as "the distance between actual developmental level as determined by independent problem solving and the level of potential development as determined through problem solving under adult guidance or in collaboration with more capable peers" (Vygotsky, 1978, p. 86). Chaiklin (2003) noted that Vygotsky developed his well-known concept of the zone of proximal development, so that the zone focused on the relation between instruction and development.

Chaiklin (2003) emphasises that the concept is titled the *zone of proximal development* and not the zone of proximal learning. In citing Vygotsky he states there is a "Unity but not an identity between learning and inner development processes (Vygotsky 1982d, p. 23)" (p. 42). The *zone of proximal development* is not concerned with the development of a skill for any particular task, but must be related to development.

Chaiklin (2003) also explored another key interpretation of the zone of proximal development in relation to the role of the support provided to the child:

> However when Vygotsky first introduces the zone of proximal development in *Thinking and Speech*, he considers it a well known fact that "with collaboration, direction, or some kind of help the child is always able to do more and solve more difficult tasks that (sic) he can independently" (Vygotsky, 1987, p. 209). More important, in his view is to explain why this happens. In other words, it is not the competence per se of the more knowledgeable person that is important; rather, it is to understand the meaning of that assistance in relation to a child's learning and development. (p. 43)

The concept of the *Zone of Proximal Development* elaborated by Chaiklin points to the challenging role of the teacher. This was also noted during interviews: *"the central role I see of the, teacher, in terms of learners is to facilitate their learning"* (Interview /27.02.07/ Gemma / Teacher Year Three); and also *"having all different ways to engage the children at their, their point"* (Interview / 7.03.07/ Anna and Sam/ Teachers Year Three). In a later chapter I return to the analysis of this understanding of the meaning of assistance in relation to the child's learning and development.

Evidence also highlighted that valuing and understanding children's predispositions to learning styles was important for the child to develop effective learning strategies which they would take with them throughout life. Two parents reflected in an interview on their children's learning styles.

> M's really good at computers so if she can do you know if she can do research she can do this she can do that if it's on a computer so if she can present whatever she has to present on a computer she's much more motivated and confident, and it gets the result

> and then she gets her self-esteem so it goes.
>
> (Interview/19.03.07/ Parents)

> Parent: I have one child that's an auditory learner and one's a visual learner, and so I've always needed it to be known that they will both learn but they learn differently and that's what I like about this school the opportunity is there.
>
> (Interview/19.03.07/ Parents)

Teachers were also aware of providing an environment that catered for the different learning styles and understandings that the children brought to the learning as indicated in the following extract.

> The prominent method definitely as I mentioned have the environment, engaging and exciting and interesting, you know, lots of opportunities for different types of learners, you know, for kinaesthetic and auditory and visual learners as well as the different sorts of intelligences
>
> (Interview / 7.03.07/ Anna and Sam/ Teachers Year Three).

> having the, diversified curriculum so that there are activities, hands-on activities for those tactile learners, our kinaesthetic learners, having some kind of oral, written, experience for those kids who are auditory learners, visual learners need to have another, something else but providing for all the learning, the different learning styles.
>
> (Interview / 7.03.07/ Anna and Sam/ Teachers Year Three)

The experiences and possibilities provided to the children in learning agreement time as well as the design of the physical learning environment reflect the understanding and valuing of the different children's learning modalities.

7.4.1.3 Motives for learning.

In exploring the motives for learning within the researched institution, extracts from the interviews shown below indicated that the goal of parents and teachers was for the children to

initiate their own learning. The role of parents and teachers was to provide stimulating, provoking learning environments and experiences. This can best be explained by the perspective Vygotsky considered, the problem of the unity of affect and intellect as a key element of his theory of the child's psychological development (see Section 2.3.5). He emphasised: "The whole point is, that thinking and affect represents parts of a unified whole-human consciousness*"* (Cited in Kravtsov & Kravtsova, 2009, p. 202). Kravtsov and Kravtsova (2009) stated: "Above affect and intellect, that is above emotions and the mind, stands the volitional sphere of the psyche. Will turns out to play the higher meditational function, thereby enabling free action to occur" (p. 202). In the example below, taken from teacher interviews it is clear that the role of the children was to engage in the learning to seek relevance, connection and purpose for the learning in their lives.

> I think if directly I thought that the main what we seek and aim for is the children to be intrinsically motivated that we don't motivate them by rewards or by punishments or a sense that you have to do this because of this and this or compliance or those kind of behavioural external constraints – so I think we want, children to learn because they have a fascination for something or because they can see a purpose for it.
>
> I guess some of my more recent thinking is, challenging, I guess realising that in the constructs of a school setting it's almost impossible to ensure that all children are intrinsically motivated all the time… I guess I'm realising that if that if we seek to look for intrinsic motivation then we're assuming a level of, connectedness that we can't ensure, for every child… . We want to seek to engage children in ways that motivate them to become more interested or to own it for themselves more over time.
>
> So there will be some things that they come across that they are naturally motivated to learn about, they've got a passion for volcanoes or dinosaurs or for numbers or you know nature, bugs which has been developed because of their background but there

> will also be areas that they haven't – had exposure to or aren't particularly motivated to learn about and that doesn't mean that we therefore say well, that's not important.
>
> I think we need to find ways to present an environment or create an environment that shows them – or stimulates them – to see what's important about that, what's interesting about that, what's knowable about it.
>
> (Interview/27.02.07/ Gemma / Teacher Year Three)

This statement by the teacher reveals the complexity of engagement of children in their learning and development and highlights the concept of the *social situation of development,* "in which the external and internal conditions are merged in a complex unity and on the features of which will depend both children's activity and their behaviour and, consequently, the entire course of the formation of their personality" *(*Bozhovich, 2009, p. 83), as a key to a child's development.

The teacher interviewed stated that she initially hoped for children "to be intrinsically motivated", for the "children to learn because they have a fascination for something or because they can see a purpose for it". In reflection she stated, "in the constructs of a school setting it's almost impossible to ensure that all children are intrinsically motivated all the time… that if we seek to look for intrinsic motivation then we're assuming a level of connectedness". The analysis of the data found a dialectical relationship between motives and motivation that is further explored in the next chapter. Bozhovich (2009) explains this connectedness in children:

> Research into the individual features of development in individual children reveals that whatever influences the environment might exert on children, whatever demands it might place on them, until these demands *enter* the structure of the children's own needs, they will not serve as true factors in their development; the need to carry out a

> particular demand made by the environment emerges in children only if fulfilling it not only ensures the corresponding objective position among those around them but also an opportunity to occupy the position to which they themselves strive, that is, if it satisfies their internal position. (p. 81)

The teacher saw her role as seeking "to engage children in ways, ways that motivate them to become more interested or to own it for themselves more over time". She identified that "some things that they come across that they are naturally motivated to learn" however she believed in other cases there was a need to provoke a motive:

> I think we need to find ways to – present an environment or create an environment that shows them – or stimulates them to see what's important about that, what's interesting about that, what's knowable about it.
>
> (Interview /27.02.07/ Gemma / Teacher Year Three)

Hedegaard (2012) states that the social situations realise the children's motives in the activity setting; the teachers interviewed saw that creating this social situation and observing and responding to the children's interactions within it were crucial elements of their role as a teacher. This was also found in the last chapter throughout the co-creation of the inquiries:

> From the institution's perspective activity settings are recurrent structures of traditions for activities that take place in an institutional practice. From the person's perspective activity settings are recurrent social situations that the child takes part in together with other persons. Vygotsky's concept of the social situation of development can be related to the activity setting from the person's emotional experience of the social demands in the setting (Bozhovich, 2009). In this way the person's activity in their social situations realises their motives in the activity setting. (Hedegaard, 2012, p. 18)

Children were also seen as an important motivator to each other. Parents and teachers in excerpts from interviews highlighted this motivation each other among students.

Parent: And it's also good to see the encouragement of other kids you know like I mean (child's name), you know in Grade 2 and, he's got this bubbly personality and if he's so enthusiastic about something or he's doing something it's like come on let's do it you know I'll show you and he'll be out there doing it, and showing? You know the enthusiasm just rubs off and he, he can get (Parent: mm) the child who didn't want to participate to actually get them to do it.

I mean it's very infectious if you're with someone that enjoys what they're doing, you'll just take a fresh look at it and you'll say let me have a look at that maybe I missed something.

(Interview/19.03.07/ Parents)

Anna: Do you know, I think about that and I think very much social. Very social straightaway. The motivation to learn at school is what is my friend doing. What are they getting out of this? More than, they don't think well you'll need this because later on – they don't care about later on; they want to know now, what is this going to do for me now right now, how is it going to make me feel about myself? So I think that's a major motivation, for a child to learn.

Sam: I think it comes back to the relationships again, relationships with different (people) and how they fit in with a community, their world, you know, what their place is and learning about themselves. I agree with you I don't think the future is a motivation for them I don't think, until, you know a bit later, may maybe Grade 5 or 6 even after that.

Anna: After that. Then they start (S-then they start) thinking longer term (S-thinking) but right now developmentally they're in the here and the now. What are you doing – I want to know what you're doing.

Sam: And, what makes them do and what makes them do it.

Anna: Yeah, yeah, yeah.

(Interview / 7.03.07/ Anna and Sam/ Teachers Year Three)

Parents also related this to the teachers: "*if they've really got something they enjoy they can impart that".* (Interview/19.03.07/ Parents)

The parents discussed the important role of the teacher in motivating students through using the child's strengths and taking time to explore the learning experience.

> Now there's areas that (child's name) good at and there are areas that she's not good at, but what I found with the teachers is that they'll use her strengths (Parent: yes) to build up her weaknesses, so then she's motivated. So for example she might not be that great with writing but if she can type and she's great on the computer, so if she can do her writing on the computer, she's more motivated to do that. (Parent: yes)
>
> So what you're saying is that the skill of the teacher lies not in knowing the subject matter and presenting it, but in motivating the children. (Parents: mm)
>
> Yeah and really I don't think there's anything that a child can't learn if it's presented in a certain way (Parent-yes) if you take time, and I think sometimes there is those pressures where you know we've got to move on now.
>
> (Interview/19.04.07/ Parents)

The teachers saw that parental expectations definitely had an impact on the children, due to the strong relationships between parent and child.

> I don't think it's a self-initiated motivation, I think it may be internalised at some point along the way, to become, like, self-initiated motivation because they start thinking, I want to please my parents. Yeah back to relationships.
>
> (Interview / 7.03.07/ Anna and Sam/ Teachers Year Three)

Thus the evidence supports the view that motivation was very much embedded in the relationships of the children, to each other, with their teachers and also with their parents.

The following section shows the importance of the child's self-esteem and confidence, developed through making connections with prior experiences. Bozhovich outlines the formation of personality determined by these two elements (see Section 2.3.2). She (2009) states:

> Formation of personality is determined by the relationship between that place that they occupy within the system of human relationships available to them (and consequently, the corresponding demands placed on them) and the psychological features that have formed in them as a result of their previous experience. It is out of this relationship that children's internal position emerges, that is, the system of their needs and impulses (subjectively represented by the emotional experiences that correspond to them) that, refracting and mediating the effects of the environment, become the immediate force driving the development of new mental qualities in them. (Bozhovich, 2009, p. 82)

Bozhovich has also argued that motivation is connected to a child's self-esteem and related confidence to engage in an activity. An interview below supports the importance of the child's belief in themselves and confidence to try new things.

> Parent: if you are not confident, (Parent: mm) bang you're not going to try, simple as that.
>
> Parent: And I think that's why it's so important in the primary years to have, for children to just think they can do anything.
>
> (Interview/19.04.07/ Parents)

Both teachers and parents highlighted the belief that when the children have this confidence they are also willing to question, to seek understanding to take responsibility for their learning.

> Parent: for people to keep saying well I still don't get it I still don't get it and then you're challenged to explain it a different way, in a different way and in another different way. (Parent: yeah) So if the children are doing that in the classes I think

> that's really taking the learning to more depth –
>
> (Interview/19.03.07/ Parents).

Analysis of the parent comment above highlights the need that the children understand the concepts which are presented in meaningful contexts by the teachers until the child is able to understand and connect to the concept being explored.

> Sam: I think a learner is, their role is, to take some responsibility and recognise that there are opportunities being provided, for a specific reason. It may not be clear but depending on you having trust in who's providing those opportunities and saying this person is giving me an opportunity here and I need to trust that they're giving me this opportunity for a reason, so taking the opportunity and exploring it, and then being able to, share and discuss.
>
> Anna; It's funny you say that because part of our rights and responsibilities we've talked about that in the classroom and that sort of thing is, one of the roles of them is, to always have a go, (Sam-mm) have a go, keep trying (Sam-yeah) you know, ask for help. (Sam-yeah) You know those sorts of things. So taking responsibility, as you were saying and having a go. And just taking those risks being open enough to go. – yep I don't know this, you know, something I'm interested in knowing about.
>
> Sam: I'm thinking about, the concept of failure or doing something wrong, and trying to, to get students to understand that making the mistakes and doing things wrong is one of the best ways to learn and they're often so afraid to do that but again if you have the trusting relationship and they have that, that, connection with you they're more, um, likely to take those risks and to fail. And fulfil their role and then and then be able to reflect on that, experience and learn from it and move forward.
>
> (Interview / 7.03.07/ Anna and Sam/ Teachers Year Three)

It was noted in the analysis of the teachers' discussion of the role of the learner that the focus for the children is taking the opportunity and exploring it, and then being able to, share and

discuss…. to understand that, making the mistakes and doing things wrong is one of the best ways to learn… be able to reflect on that, experience and, learn from it and move forward. Analysis of these comments emphasised the concept of children being actively involved in their learning as researchers.

The interviews below give evidence for how important the teachers saw the children's connection to the learning to be, and how they felt this enabled the experience to then become the motivator of the learning.

> Sam: But you do see them getting excited about things that they learn you know like when they do learn a, something new.
>
> Anna: So yeah motivation is success, feeling success, feeling good about yourself … how they treat each other and how they treat the environment.
>
> Sam: And again those environments are based around respect and trust and emotional connections, relationships and social interaction.
>
> (Interview / 7.03.07/ Anna and Sam/ Teachers Year Three)

In summary, in accord with cultural–historical research and theory, this study shows that a child's motive for learning is a complex and crucial element of their learning and development. The relationship between affective and intellectual processes underpins the motives of children. Within the social situation of development the external and internal conditions merge into a unity where the demands of the environment meet the needs of the child. The quotes above highlight examples of this. The child brings to the new experiences psychological features formed as a result of previous experiences, which are mediated and refracted in the light of the new demands within the social situation, which, when aligned to a relevant context, drive development.

7.4.2 Teachers through a personal lens.

Analysis of the data indicates that the engagement of *teachers as researchers* in dialogue and reflection on practice was a key practice of the collaborative work of the teachers. The teachers continually reflected on their responses to the questions *"What do you believe in? How are you actually doing that?"* (Interview / 7.03.07/ Anna and Sam/ Teachers Year Three). At a staff conference, the teachers were asked to reflect on their beliefs about how children learn and how their practice supported these beliefs; reflection occurred in teams. Analysis of the conversation noted the debate and reflection the teachers engaged in over how their beliefs were being enacted. Reflection also involved the critical analysis of their practice.

> Sam: We identified, that all of us all three of us we were saying that we believe about socio-culturalism and constructivism but when we really, you know when we really looked at our practice it was often based on behaviourism.
>
> Anna: Just the methods and the routines are very behaviourist.
>
> Sam; And, you know when I, when I think about that I think that, I think we go back to what is familiar to us, (T-yeah) and I think that that my experience at school was probably based on behaviourist and yours was probably based on behaviourist.
>
> Anna: And for me it was, gosh I hate that.
>
> That really frustrates me. But also, I don't think, university prepared me, for what I believed in. But I don't know if anything, if anything could, really and my personality is about trial and error and trial and error. I'm frustrated that my practice leans towards the behaviourist. Why does it lean towards the behaviourist? I have this, this feeling that it's about the level of control I feel happy about, okay. And the lack of my experience and knowledge about how to do it a different way, how to do it in another way.

Sam: But that's what, I think, we aim for in our classroom is to have that. But you know to get to have the children take responsibility to engage, you know that the environment and the learning opportunities are not just teacher initiated and directed, you know, but for me it's a hump, trying to get them to engage.

Anna: You know, to try and get them to engage and, you know, at this level of the school you have a different expectation for the kids to engage. But the thing is we have, we've chosen to try to do it differently.

Sam: We have chosen to try and do it but you question why we do it and I think why we do it is because that's what's familiar and we're at a point in our lives in our profession that we recognise that, that's not necessarily the best way to, to do what we're doing, and to make change (T-yeah) is really difficult especially when it's a changing life time habits, and life time, you know, understandings, but looking at methods of learning I mean talking about theories of education.

(Interview / 7.03.07/ Anna and Sam/ Teachers Year Three)

Gemma also referred to the same debate in her interview.

I think there still is a fair bit of direct instruction type of stuff … partly because of the need to be accountable for a specific curriculum. So we have to make sure we're covering things. It can't be an open-ended learning journey. Partly because we don't know how to do it differently, like because the system is set up in such a way and our experiences have been such that we've got such a long history of – teaching and learning in that way that dispensing with that altogether means we haven't covered and got the depth that we need across all areas with all children, so we kind of, I think, back track a little bit to what we know. And partly I think it might be something because they're things that I think you would then say, well, may not be necessary.

I'm thinking is that there is some need to communicate or connect the children to content or … new ideas that they are getting exposed to and I guess the skills of skilling them up and helping them to actually engage with those, those things but I think then – I hear myself saying again getting them to engage with those things. But if

> we're doing what's essentially chalk and talk in that direct instruction, then we're actually getting them to engage in a way that we would know is not an optimal way to engage in the learning process.
>
> (Interview /27.02.07/ Gemma / Teacher Year Three)

Analysis of the interview transcripts highlights the teachers struggled to align their new beliefs with past experiences. …When *"it's a changing life time habit, and life time you know of understandings",* the challenge is "*looking at (new) methods of learning I mean talking about theories of education… if we're doing what's essentially talk and talk in that direct instruction then we're actually, getting them to engage in way that we would know is not an optimal way to engage in the learning process".* It was also noted in the analysis that the struggle to align the system's requirements of the breadth of curriculum coverage with their beliefs about learning … *"a long history of – teaching and learning in that way, dispensing with that altogether means we haven't covered and got the depth that we need across all areas with all children".*

Analysis of the data found teachers were reflecting on their practice and aware of the beliefs about teaching and learning which underpinned those practices.

7.4.3 Parents though a personal lens.

Through a personal lens perspective the data were analysed to examine the conditions that enabled the participation of the parents. An extract from an interview discusses the need for parents to have a forum to express or discuss concerns and thoughts.

> P: Where they can go to be supported where they can go to have a voice – that they will be listened to… sometimes the teachers are not aware just because you can't be physically humanly possibly aware of everything, but I think you know our role as the parent is: okay I'm addressing a situation I want to do it calmly and talk about this, as

> best I can. Please excuse me if I'm emotional it's not, a personal attack 'cause I think that's the hardest thing, (Parent: mm) is not, to attack personally be attacked personally take it personally, but these are the situations that I have, and to, to feel that you can, there is someone within the school environment that you can go and speak to and know that it will stay there and it will be in confidence, (Parent's: mm) with that person, and that your child can feel confident enough to have – it might not be their home group teacher it may be another teacher from another grade or group that they feel that they can go and speak to them too.
>
> (Interview/19.03.07/ Parents)

> P: I've found I've always had someone I can go to with a problem, (Parents: mm) you know, here.
>
> (Interview/19.04.07/ Parents)

The emotional connection of the parent to the child's learning through the discussion of parent teacher interactions was evident in the interview. Highlighted here is how both teachers and parents felt they needed to be aware of each other's perspectives, *I'm addressing a situation I want to do it calmly and talk about this…* and to manage their interactions in a positive manner. *… Not to attack personally, be attacked personally, take it personally.*

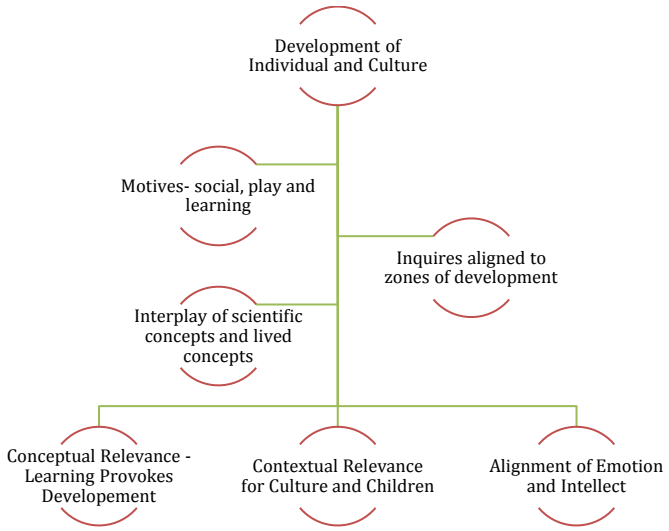

Figure 7.2. Personal aspects of participation

Figure 7.2 brings together the key concepts outlined through a personal lens analysis. The conditions created through the interactions of the participants have as a focus the alignment of emotions and intellect, the conceptual relevance of the learning experiences for the child. Such an alignment created the conditions to provoke learning at a point of need, which was achieved through a pedagogy which facilitated the development of the culture and children as active participants within that culture. The transformational learning experiences created in this way provoked an interplay of everyday and scientific understandings of concepts. The processes corresponded to the zones of development of the children and took into account and fostered the motives of the children, both social and learning. Together these interrelated elements prompted the development of the child and the culture of the institution.

7.5 Chapter Conclusion

This chapter has continued to explore the journey of a *Community of Practice* (Lave &Wenger, 1991) in a Year Three class over a year. It was found that the participants, through their interactions and active participation, had developed a shared practice of learning

together. The participants were transformed through this ongoing participation, which in, turn, impacted on the practices of the cultural community. The findings detailed in this chapter show that through collaborative inquiry and *co-creation of the curriculum* the learning of all participants was developed, as was the culture of the learning institution.

The analysis of data in this chapter responded to the following two research questions:

What pedagogical practices are in play, in a contextual, participative, community model of pedagogical reform, enacted in a government primary school?

What are the learning theories underpinning this practice?

In the previous chapter using Rogoff's *lenses of analysis*, interpretation through the *interpersonal lens* analysed the relationships and interactions of the participants in the community. It was found that relationships between the participants underpinned the learning environment within the community of learners, which included children, parents and teachers. The participants were *transformed through their ongoing participation* in the *community of practice* within the institution through interactions within *dialectical relationships* involving reciprocal roles. *Pereizhivanie*, the emotional state in which emotion and cognitive processes are inseparable, was seen as important in building a supportive environment. The findings detailed how the environment enabled deep, meaningful learning opportunities, creating possibilities for *obshchenie* where development and learning are entwined and children become the subject of their own learning.

In this chapter it was found that teachers worked collaboratively with a group of students to create a *zone of potential development*, provoking possibilities for participation by the community within the social and cultural world that was set within the child's sphere of

engagement. Shared discussion evolved, connecting teachers with the children's everyday knowledge and previous experiences. The findings detailed how *conceptual framing* enabled teachers to plan learning experiences, keeping in mind both the everyday concepts and scientific concepts to be developed by the children. This planning was enacted through *co-creation of the curriculum* involving inquiry research projects and negotiated learning, and documented using individual learning journey documents. Analysis of the data found the inquiry process involved: exploring big ideas relevant to the cultural community; determining pre-existing understandings; connecting the focal concept to the lives of the children; provoking new possibilities through immersion activities; creating and enacting a research project or series of projects; and then making the learning visible to the community. Analysis of the data found a *double move* was created through the dual impact on both the everyday lives and the development of scientific thinking of the children.

In this chapter an institutional lens was adopted to analyse the shared learning practices, enacted through the developed *participation structures* (Rogoff, 2003). Analysis involved examining the participant's roles, communication between participants, sources of learning and the institutional practices, which underpinned these experiences. It was found in this particular school that the child's role was framed as an active, contributing member of the learning community. Analysis of the data found the teacher's role was one of a mediator, providing experiences for the community to engage in, which, connecting with prior experiences and the child's motives, provoked individual development. The teacher took on a variety of positions within this process, above, alongside and below the child. The role of the teachers as researchers involved ongoing dialogue, documenting the learning of the community and individual children for the purpose of reflection on the process enacted, and deciding on possibilities for future learning. It was found that the role of the parent was to

connect with the child as a learner through sharing in the child's reflection on their learning within and outside of the institution.

The findings detailed in the chapter show that communication between the parents and the teachers occurred in a variety of ways, through documentation, displays in the room, portfolios, informal and formal messages, diary entries, newsletters, afternoon teas for discussions, open nights, portfolio nights and presentations at the end of a project. These processes supported connection between the theoretical learning that happens at school and children's everyday learning outside of school, as well as the transference opportunities between these two forms of learning. Analysis of the extensive data revealed that the three-way partnership between the child, parent and teacher supported the emotional and intellectual development of the child.

Collaboration between teachers and children was examined through community-developed sources of learning; inquiry project based learning, community meetings, learning journey documents, workshops, learning agreement time, targeted teaching and provocations. It was found that the sources of learning were enacted through the institutional practices of: collaborative learning, active learning experiences, reflection on learning and assessment as and for learning. Analysis found that in the school the participants in the social situation mediated the ideas that were valued in it, which allowed certain kinds of action, but also allowed the social situation to be shaped by the actions that individuals took in it, developing the culture as a collaborative process.

A personal lens was applied to analyse the conditions that enabled development, examine the purpose of the activity, relevance to the child and motivation of the child. In the sections explored through the interpersonal lens and the institutional lens, analysis examined the

cultural practices of the participants. Vygotsky saw instruction through participation in cultural practices as a means to eliciting new psychological development. Analysis found the children had the opportunity to engage in this social context at an *interpsychological functioning* level, with the goal of the teachers being for children to move this learning to an individual level, achieving *intrapsychological functioning*, permitting the development of new psychological functions integrated into the child's *system of concepts*. The teachers were aware that valuing what the child brings to the context, including previous experiences, personality traits such as self-esteem and confidence and preferences of learning styles and modalities, were all important for the children to be able to connect with the new experiences and provoke new psychological development. Thus these teachers valued the social situation of development as they matched the demands of the social context with the needs of the individual child at their current point of development. It was found that this process gave the child the opportunity to identify a point of conflict in their understanding of concepts related to their interpretation of the world, so that the child could move into a *zone of potential development* where the potential for development was enabled. Making new conceptual connections through engagement in meaningful, purposeful experiences with more capable others (*or I propose in collaboration with others*), moved the child into a *zone of proximal development*, where psychological functions were awakening within the child and development could occur.

The findings indicated that the teachers made connections between the two connected forms of concept development: everyday concepts that developed spontaneously and scientific concepts that developed consciously through the community's choice of investigations. A child's motive for learning is a complex and crucial element of their learning and development. The community of practice values and nurtures the relationship between affect and intellect

processes that underpin the motives of children. It was found that the external and internal conditions combined into a unity where the demands of the environment met the needs of the child creating a social situation for development. The child brought to the new experiences psychological concepts formed as a result of previous experiences, which were mediated and refracted in the light of the new demands through the social situation; an alignment of these processes drove the children's development.

The next chapter analyses the journey of the 'Prep Community' and the 'Year 5 & 6 Community' throughout the year, with an interpersonal lens perspective of the inquiry projects undertaken by each community and a personal lens focus on how the practices responded to the differing social situations of development of the children within these communities.

Chapter 8
Data Presentation: A Community of Practice in Year Prep and Year Five & Six

8.1 Overview

This chapter will begin with a discussion of the analysis of the community of practice in the Year Prep and Year 5 & 6 complexes, to determine alignment of the practices with the practice of the Year Three community discussed in the previous two chapters. Interpersonal and institutional lenses of analysis were used. Following is an examination of the community of practice through a personal lens to compare the practice when engaging with five year old, eight year old and ten and eleven year old children. This analysis will examine the motives for the children's learning and their relationship to development.

8.2 Introduction

Hedegaard and Chaiklin's (2005) discussion of the development of motives as described in Section 2.3.5 provides a focus for this analysis; here they discuss the research of El'konin and Leontiev.

> Vygotsky's colleagues El'konin (1999) and Leontiev (1978) both extended Vygotsky's theory by introducing development of motives as a central aspect of human development. Motives are seen as culturally created through the child's participation in institutional activities. El'konin describes how cultural–historical practice in institutions influence children's development and how new motives that become dominant result in qualitative changes in the child's relations to the world and therefore can be seen as markers of new periods in development. (Hedegaard & Chaiklin, 2005, p. 15)

The motives which here are seen as culturally created through the child's participation in institutional activities, lead to engagement in cultural–historical practices within the school institution, enacted by the teacher through co-construction of the learning which influences development, leading to new motives related to new periods of development. The new dominant motive-led periods of development require variations in the interactions of the teacher with the children. Fleer's (2010) *conceptual and contextual intersubjectivity* for each of the age groups needs to be examined as a means to connect the learning motive of the participants and the institution with the practices. In this chapter the variations in the *conceptual framing* (Fleer 2010) will be examined. This framing is enacted through having both the children's everyday concepts and scientific concepts in mind when planning the educational activities creating *conceptual and contextual intersubjectivity* for the children at each of the levels involved in the case study.

The study of this process of *conceptual and contextual intersubjectivity* is a key element of the possible enactment of the integration of the cognitive and affective processes of the brain, defined by Vygotsky as *pereizhivanie*, taking into account the *social situation of development* of the child.

8.3 Settings

This section concerns the settings of the Year Prep and Year 5 & 6 learning environments. These environments are described, as they are different to traditional classroom environments in schools, though they the share characteristics of the Year Three setting described in the previous chapter.

The Year Prep community comprised two full time teachers, forty-five children and their parents. Specialist staff, a physical education teacher, librarian, LOTE teacher and an ICT teacher provided sessions in their areas of speciality to the children, aligned to the classroom program, releasing the teachers for collaborative meetings and preparation time. An art specialist teacher also provided extra assistance to teachers and children in developing and implementing inquiry research projects. My role as the teaching and learning co-ordinator involved attending planning sessions.

The community was housed in a four-roomed complex, with a corridor space that had been converted into a bag storage room, a dark space for the investigation of light and the construction of a vehicle, which was connected to a role-play resource area, and an entry space. The entry space housed documentation of the learning in the form of display panels, display folders and student portfolio folders. Off the entrance space was a small room housing computers. The entry space was the entrance to two large double rooms, which were divided into purposeful spaces with the use of display panels. One of the spaces included areas for construction, role-play and a group meeting space. The second space had areas for art including tables and easels, large tables for writing, couches and shelving for reading and a group meeting space with an interactive whiteboard. Off the second space was an area for water and sand exploration. Panel walls separated the areas and panels on walls provided places for display. All the rooms were uncluttered and furnished with purposeful furnishings reflecting the needs of the potential experiences. Displays were relevant for the learning occurring.

The Year 5 & 6 community comprised 5 full time teachers, 3 student support officers providing extra assistance to children with specific learning difficulties, 120 children and their

parents. Specialist staff, a physical education teacher, a librarian, a LOTE teacher and an ICT teacher provided sessions in their areas of speciality to the children in the classroom program, releasing the teachers for collaborative meetings and preparation time. The specialist teachers also provided extra assistance in their area of expertise to children on a needs basis. My role as the teaching and learning co-ordinator involved attending planning sessions.

The community was housed in a seven-roomed complex. The physical environment of the complex changed during the year as a result of a collaborative design project enacted in the first term of the school year. A description of the complex after this re-design is outlined here. The first room was the entrance space, consisting of documentation of the learning in the form of display panels, display cases and folders. The student portfolios were housed in this space. The space also included a round table and chairs used for teacher and student conferencing. This room flowed into a large room, which was divided into purposeful spaces with the use of student lockers and display panels. A circular couch area was set up beside the student portfolios and the shelving of books, creating an inviting entrance to the room. A raised platform housed shelving with games and construction materials. An area comprising sets of table and chairs in various formations allowed various groupings of children, while another small section had a round table and chairs and yet another area a large oval table and chairs and a white board for small group explicit teaching. Panel walls separating areas, and panels on walls provided areas for display. Technology within the space comprised a section with desktop computers and a small area with an interactive whiteboard. Another room off the entrance space had a vinyl floor and a sink. This space comprised tables and stools of various heights and art easels. The room was stocked with art and science materials on large shelving and also included display tables and panels. A final room off the entrance space was a performing space and film viewing space. The room had dark brown walls and could be

blacked out with the use of blinds; stage lighting and carpeted boxes that could be used as either seating or staging were included in the space. A small room within the space was a recording studio and a spiral staircase within the room led up to a prop and costume area. Within the entrance space another stairway led up to a second level with two large rooms. A wall of glass with large glass sliding doors and large glass windows on each side separated them and provided a view between the adjoining spaces. One room was a quiet space with a beanbag area, and an area with tables and chairs. The second area was a large group space with an interactive whiteboard and tablet chairs with a basket underneath to store children's personal stationery stored in zip locked folders.

Like the Year Prep community spaces, all the rooms for the Year 5 & 6 community were uncluttered and furnished with purposeful furnishings reflecting the needs of the experiences possible. Displays were relevant to the ideas and the learning currently being investigated.

8.4 An Interpersonal Lens Perspective

8.4.1 Relationships within the learning community.

The Prep teachers, in an interview, described through a collaborative dialogue how they saw the relationship between the teacher and the learner.

> What we aim for is a position of actually co-learners so that the teacher is working alongside the child and actually learning together and researching together.
>
> And it's about guiding them, the child as well, and extending their thinking and where their thinking might be at and trying to take each moment and make the most of it.
>
> Coming from where the child is at, listening to what they say, identifying areas, of being able to extend them and then scaffold them through and a lot of the time … for

> their own learning.
>
> (Interview/ 24/02/07 / Teachers Year Prep)

This discussion illustrates the concept of the varying position of the child and the teacher. The teachers were positioned 'alongside' the learner (*co learners so that the teacher is working alongside the child and actually learning together and researching together),* above the child, *(guiding them the child as well and extending their thinking) and* below the child (*Coming from where the child is at, listening to what they say, identifying areas, of being able to extend them and then scaffold them through and a lot of the time … for their own learning)* (Interview/ 24/02/07 / Teachers Year Prep). The child interacted with the adults in meaningful contexts with each participant positioning (Kravtsova, 2008) themselves within the interactions at different positions.

The Year 5 & 6 teachers' collaborative discussion of the relationship between the child and the teacher provides further evidence of this approach,

> I believe they walk, walk the same journey, they're parallel in learning, they're both learning at the same time together.
>
> Co-learner, on a journey, together, whereby we're progressing, at our pace, whatever the child sort of brings up that they're interested in or whether it be a concept or whatever it be, you're on the journey with them (Teacher – co-constructing together) really exciting things.
>
> And many times one becomes the facilitator it could be the teacher it could be the learner depending on the expertise.
>
> And that's also handing a lot of it over to the students saying that we're going to learn from you and we can learn from you and we have a lot to offer, and others can learn from you as well and, and making it a reciprocal relationship.

> Inspire each other.
>
> You're on an inquiry-learning journey... Sometimes you're the teacher sometimes you're the learner, but you're looking for those little sparks of you know those light bulb sparks, those moments where you know that you understand something deep; it's your metacognition about it; you know it, you know you're thinking about what they're thinking about and, you're making, you're always making those connections like little synapses in your brain and then you figure out what everybody's grabbed on to and you just go with it.
>
> And to just keep asking questions whether it be the teacher or the child in order to get somewhere to move forward.
>
> (Interview/ 13/03/07 / Teachers Year 5 & 6)

This conversation above places more emphasis on the teachers working alongside the child; teachers and learners are described as *co-learner… co-constructing…parallel in learning… one becomes the facilitator… a reciprocal, relationship… see each other as a team, where you're mentoring each other… keep asking questions whether it be the teacher or the child.* This can be attributed to the age of the children and the prior knowledge and experiences that the ten and eleven year-old child could bring to the interactions of the community of learners.

The child at times was also positioned above the teacher, based on where the expertise lay; this is highlighted in the teacher quotes, *we can learn from you (the child)* and *sometimes you're the teacher sometimes you're the learner.* The role of the teacher above the child was one of documenting and recognising when learning had led to new understandings or development of the child, as described by a teacher: *you're looking for those little sparks of you know those light bulb sparks those moments where you know that you understand something deep; it's your metacognition about it, you know it, you know you're thinking about what they're thinking about, and you're making, you're always making those connections like*

little synapses in your brain. This matches the process identified in the Year Three community with the role of the teacher aligned to Siraj- Blatchford's (2007) concept of the "mediating role" of the teacher, generated through "shared sustained conversations" with children. Siraj-Blatchford (2009) describes the teacher child interjection, which guides but does not dominate children's thinking, as *Shared sustained conversations,* which evolve, connecting teachers with the children's everyday knowledge and experiences.

The teachers in both complexes, like the Year Three teachers, discussed the positive relationship with the children:

> Open relationship where the child is feeling comfortable as well as the teacher feeling comfortable and respecting each other's opinions.
>
> (Interview/ 31/02/07 / Teachers Year Prep)

> … Quality of the relationship… to have confidence in you … able to relate to you ... to trust you … to trust them in being able to progress with their learning and their personal life.
>
> (Interview/ 13/03/07 / Teachers Year Five & Six)

This trusting relationship values and responds to the concept of *pereizhivanie,* the emotional state in which cognitive and emotional processes are inseparable. This environment also enables the enactment of a community of learners within each of the complexes; as Wardekker et al. (2012) state,

> Learning needs to be organised in such a way that students can relate educational content to their own past, present and imagined future, and are stimulated to do so. The concept of communities of learners, interpreted within a cultural historical perspective, represents a possible form for this. (p. 166)

Then through this practice a *community of practice* is enabled where the participants are *transformed through their ongoing participation* in the cultural activity of education through interactions in a dialectical relationship involving reciprocal roles.

8.5 An Institutional Lens Perspective

8.5.1 Structures for Intent Participation.

8.5.1.1 Role of the teacher.

The Prep teachers, in an interview, collaboratively described their changing role, from deliverer of the curriculum, to enabling active participation of the children in the learning process.

> I think with that there's been a shift for us, a shift from concentrating on teaching, to concentrating on learning, that's been our big shift.
>
> So seeing us all as learners and all as teachers.
>
> It's the collaboration that works.
>
> The shift towards learning …what's happening within the child.
>
> So listening to the child individually and actually seeing their interests and trying to extend on them, but also considering the children as part of a community, and looking at their documents, looking at documentation of discussion, of observations, and using that as a guide for planning as well.
>
> (Interview/ 24/02/07 / Teachers Year Prep)

The teachers saw their role had changed from the traditional definition of deliverer of a curriculum to one of a *shift towards learning … what's happening within the child.* A focus at this age level was one of *listening to the child … but also considering the children as part of a*

community … looking at documentation of discussion, of observations, and using that as a guide for planning as well. This definition of the teacher's role aligns with Fleer's (2010) defined role of the teacher as creating "conceptual and contextual intersubjectivity", enabling the enactment of the integration of the cognitive and affective processes of the brain – defined by Vygotsky as *pereizhivanie*-enabled – through taking into account the social situation of development of the child.

The teachers also saw their role as shifting the perception of the child to one of an empowered learner.

> Working with the children and them shifting their perception of themselves I think, is a really important outcome.
>
> I think it's almost inherit that they turn to the teacher to look for things; by getting them and encouraging them to see themselves as powerful and the ability to make choices as well and turn to each other as much as turning to the teacher.
>
> (Interview/ 24/02/07 / Teachers Year Prep)

The teachers saw their role as shifting their (the children's) perception of themselves … encouraging them to see themselves as powerful and the ability to make choices as well and turn to each other as much as turning to the teacher (Interview/ 24/02/07 / Teachers Year Prep). At the age of five years the children had already developed a concept of a teacher as the dominating influence in the classroom. The goal of the teachers was to shift this perception within the community of learners to one where the child is empowered, making choices in their learning and learning from each other.

In an interview the Year 5 & 6 teachers discussed extensively the role of the teacher. The teachers worked collaboratively to explain the new role and the diversity within that role.

> So essentially it is to … ask questions and to probe and to extract that really deep level of thought … to link, to help them see the links between what they're studying now and, and to be able to apply that further on, further down the track or to a completely different area of study, about the same concepts or the same thought process might be used to make those links.
>
> I think to make learning exciting but also to be a provider of a link with the outside world, community involvement and trying to broaden understandings of, of where I would be in the future from a student's perspective.
>
> So you're opening up relative thinking, you're creating environments or experiences that will make those links.
>
> And get them ignited in such a way that they want to be participants and change things, or whatever.
>
> Even when, like, we're modelling team work, you know in workshops and things, I mean they're watching that and they come up to us and they bounce ideas off us too, ´cause they can see - (Teacher-´Cause they see that we're doing it.) that we're doing it, yeah absolutely…
>
> (Interview/ 13/03/07 / Teachers Year 5 & 6)

Here the teachers have identified their role as one to support the metacognitive processes of the students, to ask questions and to probe and, to extract that really deep level of thought … to link, to help them see the links between what they're studying now and, and to be able to apply that further on. [The teacher is] a provider of a link with the outside world, community involvement and trying to broaden understandings of, of where I would be in the future from a students perspective'… get them ignited in such a way that they want to be participants and change things. The teachers describe this as achieved through opening up relative thinking, you're creating environments or experiences that will make those links. These comments

match those of the Year Three teachers, and indicate that through the inquiries a double move was created between the children's everyday lives and the development of scientific thinking, achieving what Hedegaard (2002, p. 23) has suggested – that teachers need "to acknowledge the student's personal everyday cognition" and to use these funds of knowledge to develop further learning. Here a double move was possible through the dual impact on both the everyday lives and the development of scientific thinking of the children.

The teachers wanted the children to engage in real life projects which could have an influence on the current world, as well as help the children to make decisions about their future contributions to society though the goal of *get[ting] them ignited in such a way that they want to be participants*. An examination of the 'Design project' in the next section explores this idea further.

Teachers also saw their role as modelling team work within which the children would feel they could be contributors: they come up to us and they bounce ideas off us too cause they can see … that we're doing it.

The teachers outline the varying roles taken on in the Year 5 & 6 complex including home group teacher, conferencing teacher, workshop teacher and targeted teaching.

> So I mean you are a home group teacher so children know that there, there is someone there to bounce back to when they need to and that you have a special relationship in monitoring their learning, and supporting them through their progress and especially monitoring their assessment. So they're aware of that, and then that comes into a role of a conferencing teacher where you have that personal one to one time with a child and you're able to provoke thinking, discuss possible options and everything like that, and then you become the workshop teacher, and the workshop teacher again includes more possibilities in a different environment again with a larger group of students and

> helps to develop projects. And the role as the [linking with the] external community and everything. So and even as a supervisor you see each other – when you're walking around they are aware that there is someone there still looking out for them the whole time.
>
> So there's many hats; there are many different situations.
>
> I mean target teaching I think is the most, one of the most dynamic ones, where you're, yeah you have a small group of children and you're directly – explicitly addressing the particular need of a child; that's when they, I believe, they find it's most worthwhile for themselves.
>
> (Interview/ 13/03/07 / Teachers Year 5 & 6)

During the interview this discussion prompted me to ask: Who determines that need? The teachers stated: Needs are identified in a variety of ways; sometimes you just listen to a child and you identify, sometimes you observe something and so other times you're correcting just a workbook or you know this is something we need (Interview/ 13/03/07 / Teachers Year 5 & 6). This response was congruent with the Prep teachers' strategies. However a different approach with children in the 11 and 12 year old group was to discuss the needs with the children directly in interviews. I think, in the interviews you find there is a dynamic where you quickly get a snap shot of students and their particular needs in particular ways so.. (Another teacher adds) ever evolving (Interview/ 13/03/07 / Teachers Year 5 & 6). The teachers also discussed the development of the children's ability to identify their own and the group's needs, which was not evident in the five year old age group

> And lately I've had students come up to me and say look I really think we need this, as a group, okay well let's go do that in target teaching.

> And mine will specifically say let's do target teaching, but our group specifically need this.
>
> They can tell you what they want, and what they need to get better at in order to move on as a group.
>
> (Interview/ 13/03/07 / Teachers Year 5 & 6)

This highlights the varying aspects of the mediating role of the teacher (Siraj-Blatchford, 2009) when working with the different groups. The role of the teacher involves developing shared sustained conversations between the teacher and child, enabling connection of the teacher with the child's everyday knowledge and experiences as well as their current scientific knowledge, and helping the teacher (and children) to identify areas requiring further review or development. Analysis noted that the teachers discussed the identified needs of the children and together embedded new possibilities for learning in the planning. This was found to be a consistent approach across the school.

> Routinely we, we talk about, you know, what are the needs, from conferencing or based on workshops that we've had, and sometimes it might be the individual home group teacher from home group (discussions) or it could be a specific mathematics need or skill that, that we find is lacking or needs to be extended and then, using the expertise of, there's a couple of people in the group, we might say – look, you know, can you look at a few of these children? And as a group we'll decide on who needs that.
>
> (Interview/ 13/03/07 / Teachers Year 5 & 6)

Teachers also discussed the involvement of parents in realising the needs of the children through their interactions with them at home. *Other times parents are just coming up and raising issues with you and the learning of the child.* (Interview/ 13/03/07 / Teachers Year 5 & 6)

8.5.1.2 Role of parents.

The data analysis noted, Year 5 & 6 teachers see the role of the parent as a collaborator with the child through understanding what the child is currently learning and researching, *maintaining a close relationship with (Teacher - yeah) facilitators, and educators and anybody else involved with their children's learning – just so that they're active and they know what projects are being made.* (Interview/ 13/03/07 / Teachers Year 5 & 6)

This relationship developed further from the relationship with the five year old as the 11 or 12 year old child's engagement in projects or inquiries was more complex.

> The best parents are the ones that are able to identify very quickly where they can support their children in learning and even sometimes move away from what the school is doing and address a particular need or a particular project or an interest that they see that for their child's future and say, how about you go down this path cause this is something we're talking about and discussing extensively at the moment – why don't you think of this why don't you do this?
>
> (Interview/ 13/03/07 / Teachers Year 5 & 6)

Evident in the data is the view that parents have the possibility to extend the child's school learning by linking the scientific understandings being explored at school with real life experiences, in turn developing the child's everyday concepts as they are explored in meaningful contexts. *Extending the experiences that they're having at school into (Teacher - yeah) picking out particular places in real life where they can use a particular skill or (Teacher - yeah) something that they've learnt.* (Interview/ 13/03/07 / Teachers Year 5 & 6)

8.5.1.3 The role of the learner.

At interview the Prep teachers described the role of the learner as changeable in accordance with the inquiry process. However, it always involved the following features: participation

through engagement in the process of learning, respectful interactions and reflection and justification of thoughts and theories. A conversation about the role of the learner by the Prep teachers highlights these points:

> ... To make choices about what they… they're interested in.
>
> Yeah their interactions within the room and particularly with each other, and with the teachers as well, so I think their role adapts and changes and, depending on where they're at and where their journey's going.
>
> I think there are certain expectations: the expectation of accountability for their learning, the expectation of respecting each other in the physical environment, and our greater community.
>
> To justify their thoughts or theories or, you know, if they're going to make a statement about something or have a question, then there's an expectation of that that goes somewhere.
>
> (Interview/ 24/02/07 / Teachers Year Prep)

Analysis of the Year 5 & 6 teacher interview question, '*What's the role of the learner?'* found responses focused on the participation of the children as active, connected and challenged participants. Their conversation reflected a shared understanding of the role as:

> To grab hold of opportunities
>
> To become involved
>
> To question
>
> To grab hold of things that are different and new and exciting and, and to share them with others

To be responsible for their learning

Push the boundaries

Yeah extend themselves

Take risks

Go into territories that they're not always comfortable with

Reflect on themselves, identify their strengths, and recognise their weaknesses, areas for future development

Reflect on processes.

(Interview/ 13/03/07 / Teachers Year 5 & 6)

Analysis found that the viewpoints of the teachers in regard to the role of the learner share common characteristics. Both groups of teachers interviewed discussed the role of the learner as a participant in the community of learners.

Interactions …with each other, and with the teachers,

Respecting each other in the physical environment, and our greater community.

(Interview/ 24/02/07 / Teachers Year Prep)

To grab hold of things that are different and new and exciting and, and to share them with others.

(Interview/ 13/03/07 / Teachers Year 5 & 6)

Both groups also discussed the active involvement of the children in their learning

... To make choices about what the… they're interested in.

> Adapts and changes and, depending on where they're at and where their journey's going.
>
> (Interview/ 24/02/07 / Teachers Year Prep)

> To grab hold of opportunity.
>
> To become involved.
>
> To question.
>
> (Interview/ 13/03/07 / Teachers Year 5 & 6)

Teachers commented on the role the child plays in determining the learning that has occurred. They noted the following important aspects of the child's role: *accountability for their learning,* (Interview/ 24/02/07 / Teachers Year Prep) and *to …[take] responsibility for their learning.* (Interview/ 13/03/07 / Teachers Year 5 & 6)

The teachers also discussed the development of thinking and reflection strategies by the children,

> To justify their thoughts or theories or you know if they're going to make a statement about something or have a question then, there's an expectation of that that goes somewhere.
>
> (Interview/ 31/02/07 / Teachers Year Prep)

> Reflect on themselves, identify their strengths, and recognise their weaknesses, areas for future development.
>
> Reflect on processes.
>
> Push the boundaries.
>
> Yeah extend themselves.

> Take risks.
>
> Go into territories that they're not always comfortable with.
>
> (Interview/ 13/03/07 / Teachers Year 5 & 6)

The analysis of the data noted that learners were consistently seen to be active participants in their learning within a community of learners, accepting responsibility for their involvement, and reflecting on their learning throughout the process.

8.5.1.4 Sources of learning.

Year Prep

The data show that the sources of learning within the institution of the school were centred on community inquiry. The area of interest that could be used to explore the concept of the inquiry was a challenge for the Year Prep teachers as they had limited knowledge of the children's interests and prior life experiences.

> We have a big idea that we want the children to explore …with Preps they're coming in to this environment and we don't have the background information on them – in some ways can make it more challenging, but we actually listen to the children very early on and really, you know determine their interests.
>
> We project what we think could happen. And are flexible to changes – what happens within that as well.
>
> (Interview/ 24/02/07 / Teachers Year Prep)

In the inquiry project researched in the case study the teachers selected the big idea of community and relationships. Their observations in developing this big idea into a research project were: *the beginning of the year the kids came to school really wanting to explore their physical environment (together), by creating a community, but then also were exploring the*

wider community so that really guided where we went with the project. (Interview/ 24/02/07 / Teachers Year Prep)

Within the observations of the children the teachers also noted the advantage of using favourite activities of the children to provide opportunities to develop other key skill areas: *you know some children are very highly motivated to do building (construction materials) they want to go back to that so us being aware and actually using that motivation to guide them to writing or to guide them into other activities.* (Interview/ 24/02/07 / Teachers Year Prep)

The selection of an inquiry with contextual relevance and aligning this concept to the interests of the children reflects Hedegaard and Chaiklin's (2005) *double move* approach using everyday local activity as a means to develop scientific knowledge and, in turn, to influence the children's everyday interactions with the local culture of the community.

Data analysis indicated that *Learning Agreement* time during the first session of the day was a time for children to engage in activities related to the community inquiry. This occurred through the provision of provocations to explore the research question using various activities and mediums.

> With the set-up of the classroom the children are actually engaged in different activities depending on different learning styles.
>
> (Interview/ 24/02/07 / Teachers Year Prep)

The children also had opportunities to engage in areas of interest: the children come in and they come into an environment that is set up and ready for them to explore but at the same time if they come in with a certain interest or a certain question I think that we try and make

the most of that immediately.

(Interview/ 24/02/07 / Teachers Year Prep)

The children used a learning journey document to track the experiences they engage in during this time. This document was negotiated with the home group teacher. Learning agreement ended with a reflection session, for the children to revisit what they had been engaging with, share their ideas with their peers and receive feedback from their peers.

> An important thing and I think for the children is the opportunity to revisit, situations and things, so that they can go back and build on or develop or … explore it again.
>
> Giving them time to actually be involved in the reflection process so that other kids can make suggestions and then they can revisit as well.
>
> (Interview/ 24/02/07 / Teachers Year Prep)

For the other children in the class it was the opportunity to be *observing their peers and their friends and look at what they're doing (and thinking) oh I want to give that a try and try* (Interview/ 24/02/07 / Teachers Year Prep). It was evident in this excerpt that this process created opportunities for the children to influence each other's learning, reflecting the concept of a *community of learners*.

Analysis of the processes of *Learning Agreement* time indicated that teachers had the opportunity to observe the children interacting with the proposed provocations and that students initiated self-directed activities. This enabled the teachers to obtain evidence to support planning, which reflects a *conceptual and contextual intersubjectivity* (Fleer 2010) regarding the learning needs of the children.

Analysis of the data found that this knowledge was used to plan workshops for the second session of the day, with the outcome of linking the children's empirical and paradigmatic thinking with narrative knowledge and using this association to develop theoretical knowledge and thinking methods (Hedegaard, 2012). In the second session of the day teachers led *workshops* with a group of children having a similar need, or to present them with an experience to provoke their thinking. These sessions were carefully planned, based on active discussion among the teachers as to what the next stage should be in the journey of the inquiry project and the children's learning.

> The planning for them ... We start (by) reflecting on the documentation we have.
>
> Read through, reading through the discussions, or look through the photos, or even just talk about what's been happening.
>
> Observation.
>
> Yeah based, really based, on observations I think, and the discussions that have taken place.
>
> And also within the context of our greater projections for our projects. So considering our projections for our project and then, the current documentation.
>
> And now where can we take it and how are we going to get them there and what sort of experiences are we going to provide and …
>
> And again relating it to the activities that are happening in the morning sessions; as well, I think, extending on those activities during workshop sessions so that things are actually related.
>
> *Responding to their needs.*

(Interview/ 24/02/07 / Teachers Year Prep)

Analysis of the evidence found that the teachers as quoted above stating, 'that through considering our projections for our project and then, the current documentation. And now where can we take it and how are we going to get them there and what sort of experiences are we going to provide?' (Interview/ 24/02/07 / Teachers Year Prep) were working collaboratively to create a zone of potential development (Kravtsova, 2008) for the children with the goal of creating an individualised zone of proximal development (Vygotsky, 1978 p. 86) where engagement with others who provoke their thinking could lead to actual development.

The data showed that each day ended with a reflection session, which the parents were invited to sit in on. Class meetings were also held to reflect on the journey of the inquiry, making visible to the child the thinking being explored. These were practices of a *community of learners* using collaborative discussion for reflection and to make the thinking in regard to the inquiry visible. This discussion could involve all members of the community: teacher, children and parents.

Assessment of the children took place within the context of the learning throughout the day.

> Within context the children need to be observed and it's our responsibility as teacher or facilitator to actually see them in different contexts and recognise them within those contexts where they are comfortable. As soon as it becomes out of context, it can be totally inaccurate in view of where that child is at.
>
> Not a true representation of what they can achieve or their abilities.
>
> (Interview/ 24/02/07 / Teachers Year Prep)

The focus of the assessment was on understandings, not isolated facts out of context.

> We really want them to have deeper understandings rather than just the rote learning of, for example, counting to 20, that we actually want them to have a deeper understanding of what these numbers mean and why they're used
>
> (Interview/ 24/02/07 / Teachers Year Prep)

The data showed that assessment of children's learning was contextual and authentic. The children were able to demonstrate their new understandings and skills in meaningful situations.

Year 5 & 6

The analysis of data indicated that the inquiry project approach was an important component of the Year 5 & 6 curriculum. A big idea guided the investigation; immersion activities connected the investigation to the everyday lives of the children and their pre-existing understandings.

> We guide an idea … about myself (Teacher - yeah) and the world in which I live, scaffolding through processes of thinking strategies, so that they're getting a more wholistic picture.
>
> The big idea that we use to sort of help us direct what kind of an investigation we will take and then, that's where the immersion comes into it… using different forms of that idea.
>
> Use the baseline information that you've gathered from the immersion, you know, you find out what the kids are interested in.
>
> It's reflecting on what the children are saying, through the immersion and identifying their understandings and extending them.

> Listening to our student's needs we're looking at levels of development, according to observations and readings and so forth, parental concerns or things that they think that their students should be looking at too. There's a multitude of things happening before we would, make a decision… the children need to understand it.
>
> Yeah definitely from there, it is developed using the experiences, the experiences that they've come with and the understandings that you want them to have as well as their questions and, you know, trying to make that road one brick at a time to sort of see where it all takes you.
>
> (Interview/ 13/03/07 / Teachers Year 5 & 6)

The last comment supports the finding that the process was an authentic collaborative inquiry built on prior knowledge and understandings with the teachers engaging in *conceptual and contextual intersubjectivity* (Fleer, 2010) to lead the journey of the inquiry, with the intent that learning would lead to new questioning, provoking development of the children.

Throughout the inquiry process the use of discussion and questioning was a teaching and learning strategy, which fostered the co-construction of the experiences presented. The topic of discussion came from both children and teachers. Discussion itself involved interactions between the teachers and children as noted in an interview by one of the teachers: *discussion is… a sharing component, whether it'd be things that have been brought in from, you know home life or from excursions and experiences* (Interview/ 13/03/07 / Teachers Year 5 & 6). Discussion was also found to occur between the teachers in the form of ongoing reflection on practice. At interview a teacher saw this reflective discussion as involving:

From your own experience where you've been, questioning what you've done, questioning – you're questioning (Interview/ 13/03/07 / Teachers Year 5 & 6). It was found that the teachers continually questioned the alignment of their planning with the outcomes of the children's

learning; such reflection was often enacted through open discussion of the experiences and the collaborative inquiry.

The data analysis indicates that throughout the inquiry process the teachers and students were aware of the possibilities of engaging in learning experiences using varying learning styles.

> I just, you know, recently I can see the difference that it makes in visual learners and kinaesthetic learners when they actually have something to look at and hold on to and to move around when you're teaching a particular say maths skill, versus when you're just writing numbers up on the board and vice versa it's all very important to sort of inter link (Teacher-mm) those methods of learning together to construct a whole idea, for understanding a concept.
>
> (Interview/ 13/03/07 / Teachers Year 5 & 6)

According to the teachers the physical environment supported the engagement of children using a variety of approaches with provocations set up in the room by teachers or initiated by the children.

> The environment is set up in such a way (Teacher-yeah) that the students see that each of the rooms have different purposes and so forth and that they have the opportunity to explore within those rooms. And then there may be just things and so forth, or ideas that the students have come up with, that may facilitate, a passion project.
>
> (Interview/ 13/03/07 / Teachers Year 5 & 6)

The conditions allowed for creative approaches to explore the big idea under investigation. The teachers in an interview describe the process.

> Creative elements, investigating (Teacher - exploring)… constructing different perspectives on even just one concept.
>
> You know (Teacher-mm) looking at things (Teacher-mm) through different eyes.

Through different lenses.

So it could be a dramatic activity where a geography issue or whatever it be and they actually bring it to life through walking through it.

Becoming the characters.

And really creating the scenario.

Making connections between, learning areas.

(Interview/ 13/03/07 / Teachers Year 5 & 6)

It was found that the teachers saw the Learning Journey Documents and the weekly timetable as a means of communicating the collaborative, negotiated processes of learning.

And the negotiation aspects covered in the learning journeys (T's-mm) that the students co-construct with their home room teacher with any other aspects that may have come in from other teachers that have been, and then that's put together and then the parents also come into that ´cause that's a shared document.

It's emailed home so it's easily accessible … especially with parents that aren't able to come.

Timetabling is probably a huge communication method in that, it, tells the students where they need to be and where they need to be around, where they've got to go and everything.

And tell the parent what they've been doing and exactly what is going on at school and when, and it also in a way provides the parents to come in and offer any expertise or knowledge that they might have, so it's involving the community, inside.

(Interview/ 13/03/07 / Teachers Year 5 & 6)

The data showed that assessment of a child's learning was an embedded process with many interrelated elements. Assessment practices in the school involved *conferencing* with the children using anecdotal notes, photos and work samples as the basis for the conversation. Teachers in an interview discussed this process:

> Assessment has to be an on-going process and whatever works for you whether it be, like for myself it's anecdotal notes; I'm constantly doing conferencing, time slots with children, jotting things down, tape recording. And photos.
>
> A collection of student work samples – in conjunction with discussions that you've had with them, questioning or whatever it be, to reveal other levels of understandings.
>
> (Interview/ 13/03/07 / Teachers Year 5 & 6)

The focus was on tracking the development of the whole child: this point is emphasised in the interview with the teachers:

> Yeah and, looking at the whole child not just mathematics or English but looking at their social development as well and looking at their interactions with each other.
>
> I always look at their confidence when they grow confident and they start reaching out for bigger and better things and you think, this child's definitely on their way.
>
> Developing their risk taking, you can look at their resilience, so you can measure that.
>
> (Interview/ 13/03/07 / Teachers Year 5 & 6)

It was noted in the interview that the teachers tracked not only the development of traditional knowledge subject areas such as Mathematics and English, but were also tracking the children's social abilities, confidence, risk taking skills and resilience development.

> The assessment process was collaborative, with teachers discussing individual children's learning and development. The teachers also focussed on developing

> consistent means to assess children through moderating their interpretation of the evidence collected. These processes were discussed by a teacher in the interview: *Talking to other teachers about what they know, about that particular child as well and sort of moderating, your ideas or, or getting more information about them as well.*
>
> (Interview/ 13/03/07 / Teachers Year 5 & 6)

The information about the child was collated into a portfolio. This portfolio was an ongoing document developed throughout the life of the child in the school, tracing the child's development.

> Portfolios and especially digital portfolios are probably an excellent method of, you know, being able to monitor children's learning for a period of time, going back to very, young age and being able to acknowledge strengths and weaknesses there and having teacher input into those is very important
>
> (Interview/ 13/03/07 / Teachers Year 5 & 6).

Students had a voice through reflection documents such as a student comment in a report, because that showed that we're going to give the child a voice in their own report, and through individual selection of items to include in their portfolio (Interview/ 13/03/07 / Teachers Year 5 & 6). The portfolios were used as a basis for student led conferences with parents. Teachers discussed in the interview their purpose for student led conferences:

> Student conferences which are so dynamic I mean having your child lead the discussion in terms of discussing their assessment and, and allowing parents to ... question their own child as to their progress … you've got a student reporting to their parents about their strengths and their weaknesses and their goal planning.
>
> (Interview/ 13/03/07 / Teachers Year 5 & 6)

The analysis of the sources of learning enacted by the Prep and Year 5 & 6 teachers indicated similarities in process and terms such as learning agreement time, workshops, targeted

teaching, inquiry research projects, assessment strategies. Differences identified through the analysis of the data resided in the enactment of these processes for each of the different age groups due, I believe, to their social situation of development. The Year Prep learning agreement session was often very directed by the physical environment possibilities that had been set up for them by the teachers in response to conversations with groups of children and observations by the teachers of the children's participation in planned experiences. Throughout the rest of the day the children were involved in planned teacher activities aimed at developing in them the skills and understandings relevant to the collaborative inquiry research. The focus of the children on engaging in the experiences was a combination of motives: play motive, social motive and a developing learning motive. Analysis of the Year 5 & 6 sources of learning indicates a greater focus on collaboration between the teachers and students within the learning neighbourhood with a focus on the inquiry research process. Learning agreement time took place throughout the day, with student negotiation to attend workshops through a selective timetable. The children were active participants and stakeholders in the development and enactment of the inquiry. The outcomes of the Year 5 & 6 inquiries had an authentic audience and impact on the experience or knowledge development of the community. The focus had developed from a learning motive to also include an action motive to impact on the world around them. The social motive was, however, very dominant, and involved engaging with others in the community of learners to enact the community practice of learning. The play motive had developed, with continued curiosity, into a creative motive of idea development and creative expression.

In the next section I explore the evidence to support these findings through data related to two research projects.

8.5.2 Transformation through collaborative participation - co-construction of the curriculum.

This section traces the journey of an inquiry in the Prep complex and the Year 5 & 6 complex, using documentation from the teachers and the children to make visible both the process and the learning.

8.5.2.1 Prior knowledge / pre-existing understandings.

In alignment with the data examined for the Year Three community inquiries it was found that the investigations, consistently in each learning community, began by determining the children's prior knowledge and their pre-existing understandings of the concept being explored, developing a connection to the children's everyday lives and existing conceptual understandings.

<u>Year Prep Inquiry</u>

The data indicated that, at the beginning of the year, with a new group of children arriving in the school, the focus for the teachers was to develop a community of learners. The teachers looked for a connection with the children's everyday lives to explore this concept and found an interest in animals provoked possible investigations.

> From the first day of school, it became apparent that this group of children held a passion for animals. In response to this, we provided the children with many opportunities, using a variety of languages, to explore their passion and for us to research and listen to their understandings. These experiences included construction and role-play, puppetry, clay, plasticine, play dough, fine line drawing, collage, box construction, internet searches, music and using light to create shadows.
>
> (Document /2006/ Reflection)

As noted in the data, to explore the prior knowledge and pre-existing understandings of the children, teachers and children brought in a variety of their pets to provoke discussion. The children were asked the question, *What is a pet?* The discussion shows that the question challenged the children's perceptions of their everyday concepts.

> E: A horse because you can look after it and give it food and give it a bath and then when it is bedtime you can give it a bed.
>
> F: A horse is a pet because it eats grass and people go on it and ride on it.
>
> C: A horse is a wild animal.
>
> U: Pets are good, some pets are trained, some aren't.
>
> Jo: I think a cat's wild. The big cats because they can bite you and eat you for dinner.
>
> Es: A cat doesn't bite but a wild animal does.
>
> (Document/ 2006/ Transcript)

<u>Year 5 & 6 Inquiry</u>

In the Year 5 & 6 complex the big idea selected by the teaching team to begin the year was the concept of 'Design'.

To enact the goal of listening to existing understandings and theories, an open-ended question with a variety of forms of response including, drawing, oral and written was presented to the children. *'How does design influence your life?'*

The findings in all three studies, Year Three, Year Prep and Year 5 & 6, showed that the examination of the pre-existing understandings and prior knowledge about the concept

supported the development of a learning motive (Hedegaard 2002). The children were connected to the concept under investigation through the teachers beginning with questions to determine their pre existing understandings, linking the children's current understandings to the concept being explored.

8.5.2.2 Immersion - exploring possibilities for research.

As also revealed by the Year Three data analysis of the immersion into an inquiry, the process for each of the other two communities of learners began by building on the children's everyday and narrative knowledge. The following outlines of the inquiries detail how the exploration of empirical knowledge led to the possibilities of exploration of theoretical knowledge, through which a deeper analysis and influence on the children's everyday, narrative knowledge was made possible.

Year Prep Inquiry

The findings show that, as part of the immersion into the investigation, the teachers decided to set up a role-play 'vet' in the classroom where the children spent much time interacting with each other and the different toy animals. A teacher documented the interactions within the role-play activity:

> K: Someone needs to be in that room (pointing to the waiting room)
>
> Ja goes over to the computer
>
> K: Everyone has to give the animal food. I have to give some food for the animals. Temperature (She mutters quietly to herself, using an icy pole stick to check the animal's temperature.)

K: (To A who has walked in with a sick toy animal) Let's see your pet. So what happened?

A: He chucked up since yesterday?

Ka: (Looks at the animal) His heart is not pumping right.

B: 3 more weeks, he will be OK in 4 weeks.

(Document/ 2006/ Transcript)

Analysis of the data notes how the teachers, in response to their observations of the children, provoke the children's thinking by ask the empirical question, *Are you an animal?* The children's responses are documented as follows:

E: Humans are animals because we look like them.

Te: I don't look like an animal.

E: We look like animals and have things like animals.

Ry: We're not animals because we are different. We have two legs.

Mu: I want to be an animal.

Co: Yes, I'm a tiger.

And: I'm a duck.

T: I'm an animal – a big elephant

(Document/ 2006/ Transcript)

The conversation moved from a discussion of physical attributes, to a fantasy perspective where the children took on the role and attributes of animals. Analysis of the experiences

noted these varying responses indicated the motives of the children to engage in the discussion, with some children becoming involved through a play motive – *I'm a tiger*, whilst other children engaged through a learning motive: *We're not animals because we are different. We have two legs*.

It was noted in the data gathered that during Learning Agreement Time, the children were given the opportunity to draw different animals. With the guidance and provocation of a teacher, they looked at the different characteristics of the animals (empirical knowledge) and were encouraged to observe closely and draw what they saw. Many of the children went on to colour their animals using watercolour paints.

Analysis of the data noted the teachers continually reflected upon the connection of the children to the investigation:

> The children's interest in animals seemed to come from two different perspectives. They were interested in pets as animals that they have personal relationships with. However they were also interested in what we labelled as "wild animals". We continued our immersion with this in mind.
>
> (Document /2006/ Planning Reflection)

The children had everyday knowledge of pets and were interested in the paradigmatic knowledge of '*wild animals'*. It was noted that the teachers then organised a *Visiting farm,* to provide another experience of the children in interaction with the animals for the teachers to observe. Analysis of the children's comments found their responses were focused on personal sensory interactions.

> R: I saw pigs

A: I was holding the rabbit. It felt soft.

Kh: I fed the guinea pig and I held it.

Th: I felt the guinea pig and its claws were sharp.

(Document/ 2006/ Transcript)

An excursion was organised to the Werribee Open Range Zoo as the teachers wanted to provide the children with an opportunity to see the animals in a more natural habitat. A teacher in the documentation discussed the results of the reflection on the excursion:

> Upon returning to school we wanted the children to think deeply about their experience and to reflect closely at the photos we had taken. We began to do this by considering the sequence in which we saw the animals. The children then began to think about making their own map of the zoo using the photos we had taken to assist. This process required close observation and reflection as they tried to match up the grass colour to the paper that they were using.
>
> (Document/2006/ Planning Reflection)

The teachers reflected collaboratively upon the direction of the inquiry, taking into account the responses of the children to the experiences provided. The findings indicated that the challenge for the teachers was the connection of the children to the inquiry. In an interview the teachers discussed this:

> What became apparent from the animal farm, Werribee Zoo excursions and other interactions with pets, was that the children were more interested in their relationships with the animals than the animals themselves. So the teachers sat down again to define where the project was heading. We decided that essentially the children were interested in investigating relationships and it became apparent that the mechanism we could use to investigate this was animals.
>
> We eventually decided on a focus question for our project.

> "How are the relationships of animals different to the relationships of humans?"
> (Document /2006/ Planning Reflection)

It is evident in the data that the teachers had determined that the motive of the children was to engage with the animals: '*the children were more interested in their relationships with the animals than the animals themselves'*. The findings of the analysis indicate that the teachers were looking for a means to move the children deeper from their everyday knowledge of relationships to a theoretical perspective on relationships; they did this by establishing the research question.

"How are the relationships of animals different to the relationships of humans?"

The data indicate that the process of the inquiry investigation at the school had the characteristics of the double move approach (Hedegaard & Chaiklin, 2005). The teachers took the children's dominating motives into consideration, including social, learning and play motives, when formulating the inquiry project. The teachers supported collaborative work on the research tasks, and formulated problems that require collective effort for solution. In the next phase of the research process the children were given responsibility for active research into the inquiry, which helped them gain knowledge of the basic relations in the inquiry into relationships for the Year Prep community, so that they could formulate their own understanding and in turn develop the skills to research their own problems.

The data showed the community began to explore the research question through exploring the question, *What is the relationship between animals and animals?* This concept was provoked by the question *What is a wild animal*? The responses were again related to the relationship of the animal to the child.

Tet: Crocodile, they're scary

P: Leopard, they use their claws to scratch us.

M: Shark. It bites.

P: I know why they're wild. They can scratch us and do bad stuff to us.

Jo: They can eat us for their dinner.

(Document/ 2006/ Transcript)

Findings show further questioning provokes the children to look beyond personal everyday experiences to scientific concepts.

What determines if they are wild?

U: If their mum is wild and if their mum isn't.

Al: If their mum is wild then they are wild.

What is the difference between wild animals and pets?

F: A horse is a pet because it eats grass and people go on it and ride on it.

C: A horse is a wild animal.

Jo: (A wild animal) can live in the zoo. Some live in the zoo but the real home is out in the wild.

Una: Pets are good, some pets are trained, some aren't.

Teacher: Do pets hurt, bite or scratch?

Jo: They scratch accidentally

Es: A cat doesn't bite but a wild animal does.

J: The pets are trained not to bite or claw or kill people. They only kill if you're trying to attack them. The wild ones doesn't matter if you attack them or not. The ones in the pet shop are trained but the ones in the zoo aren't.

Teacher: Do you think animals can communicate with each other?

J: Yeah … if I was a rhino and Je was a rhino we could talk because we are the same. If Jer was a hippo we couldn't understand him because he's different.

Teacher: How do humans communicate?

Jo: We can use our hands and use sign language.

N: Instead of talking we can write.

P: We communicate by talking and animals communicate by talking in their language and we talk different and the animals talk different.

(Document/ 2006/ Transcript)

Some of the children's theories also showed that they were continuing to draw on their personal human experiences to try and understand the relationships animals have with each other. This finding shows the children were using their previous understandings to make sense in the development of new understandings, trying to make connections within their *system of concepts* (Vygotsky, 1987a*)*.

Jo: Sometimes they (animals) use movement (to communicate). They could show actions if they wanted to talk to them with sign language. Some animals are lucky they can move to do sign language to all the other animals.

> I think only some animals can communicate. They have to be from the same country. If Jer was a hippo from America, Je (a hippo) from England and I'm (a hippo) from Australia we couldn't communicate coz we're from different cultures.
>
> (Document/ 2006/ Transcript)

This scientific discussion of animals continues in other experiences within the community. One teacher documented an interaction of a group of boys during a self-selected activity during Learning Agreement time:

> During Learning Agreement Time, T, C and P were engaged with a model farm that had previously been set up by the children. When I approached them I noticed that they had brought the gorilla, elephants and leopard figurines that were nearby over to the farm area. I asked them if these animals live on the farm. To which they all replied a definite "NO". I then asked then "where [do] they live?". To which they had mixed reaction and a debate occurred over whether they lived in a jungle or a zoo.
>
> (Document /2006/ Planning Reflection)

A discussion about where animals live developed.

> P: We're making a zoo and a jungle.
>
> T: Lions live in the zoo.
>
> J: Here is a dog….but not in a zoo. Well… how about this…(a figurine of a farmer).
>
> P: No… that is a person … a farmer.
>
> M: Do this go in a zoo? (goat)
>
> C: No, that's in a farm.
>
> Teacher: What else might you include?

C: maybe birds… water buffalo live in the jungle or in Africa and tigers in Africa. (Turns to T) Where do Water Buffalo live?

T: In mud and in grass.

C: Giraffes live in the zoo

(Document/ 2006/ Transcript)

T has a fascination with water buffalo from his family connection with Vietnam and is referred to as an expert by the other children. (Document /2006/ Planning Reflection)

The findings show that in their planning the teachers continually strove to achieve conceptual and contextual intersubjectivity, linking the concept development of relationships with the contextual interest area of animals. The level of children's thinking moved from everyday knowledge about pets and wild animals to the exploration of scientific knowledge about characteristics of animals, their interactions and habitats.

Year 5 & 6 Inquiry

Through reflection on the children's responses to the question *'How does design influence your life?'*, the teachers planned four immersion sessions to build on the everyday knowledge of the children and to look for possibilities for a research investigation, to take the children's thinking to a theoretical level and, in turn, enable deeper analysis and reflection on their everyday knowledge, influencing their everyday interaction with the community and culture in which they live. These sessions were planned taking into account the learning motive of the children to investigate design in areas of interest. It was noted the immersion sessions involved the conceptual areas of:

'Design in invention'

‘Fashion Design’

‘Architectural Design’

‘Design in Art’

(Document /2006/ Planning Reflection)

It was also noted that an annual camp to Canberra and a Melbourne excursion were experienced with a design focus to support the teacher’s observations of the children’s engagement with these experiences, to determine the possible connections to possible research projects.

Analysis of the data found that the immersion phase of the inquiry research project in all three learning complexes had as its focus to build on the children’s everyday and narrative knowledge determined through the process of examining the children’s pre-existing understandings of the concepts under investigation. This process developed the children’s theoretical knowledge, as the learning community sought a research question to explore in depth. The process shared characteristics with the double move approach (Hedegaard & Chaiklin, 2005), with the teachers taking the children's dominating motive into consideration when formulating the inquiry project, collaborative work on the research tasks being supportive of the children’s social motive, research questions being formulated that require collective effort for solution, so that children could formulate their own understandings and in turn develop the skills to research their own problems. This part of the research process is explored in the next section.

The evidence demonstrates the extensiveness of the immersion phase of the research in the Prep complex, since a variety of experiences were explored with the children, as the teachers

analysed relevant possibilities for a community inquiry. The Year 5 & 6 immersion phase was much shorter as the children, in collaboration with the teachers, developed the possibilities for research. Ideas for a research project could be discussed and debated with the children to collaboratively determine the direction of the research.

8.5.2.3 Collaborative inquiry research.

Again, as the Year Three data analysis reveals the collaborative inquiry phase to be where the children's learning motive became connected to the subject matter and in turn the subject matter concepts have become the basis for the children's development of a reflective and theoretical orientation to the world (Hedegaard, 2002, p.21). As Davydov (2008) argues, "Theoretical thinking sets itself the goal of reproducing the essence of the object of study" (p.107). Data provided evidence that each study demonstrated the community's collaborative inquiry, enacting the essence of the concept under investigation.

Year Prep Inquiry

The teachers asked the question: *What relationships do animals have?* The responses started to explore the scientific concept of the relationship between the physical environment and the animal.

> Ry: Relationships are maybe all the animals' friends.
>
> Y: Animals live in the jungle.
>
> U: I have relationships with my mum and dad and whole family.
>
> Teacher: So how about animals…what relationships do animals have?

K: What about the animal's environment…they live in environments.

Je: Some animals have Savannah and grass to eat.

Ry: Maybe with trees.

U: Or with other animals

N: Or the plants.

(Document/ 2006/ Transcript)

It was noted that the play motive displayed through the fantasy aspect of the children's consciousness was still evident in the comment, *"Real animals don't talk for real do they?"*

This statement provoked a discussion by the children.

D: I think fake animals can talk.

L: If they are wearing a mask they can talk. If you go to the zoo they don't talk.

Te: Real animals don't wear masks.

T: Cartoon animals talk.

L: Only cartoons talk, the zoo ones don't talk, they just walk and eat stuff.

Ma: Animals can make sounds but they can't talk.

T: They make elephant noises and other animal noise.

Te : And giraffes talk…the fake ones.

De: Only puppet ones can talk

L: The people dress up like animals and they start going in the movie and in Madagascar in the movies they talk in the movies.

An: Real animals can talk. They talk in their language like dogs talk in their language.

(Document/ 2006/ Transcript)

Analysis of the data shows the teachers next provoked the children's thinking about the research question through developing a collaborative inquiry focused on the relationships of animals. The children, in groups, investigated animals and habitats within Australia. Documentation by the teachers provides the following summary

What have we discovered about the habitats in Australia?

•C discovered that there was beach and city in NSW.

•T found desert and grassland in the Northern Territory.

•J found a rainforest in Queensland.

•M found a river, a city and grassland in Victoria.

•S found a secret island and rocks and a big mountain (Uluru) and sand.

(Document /2006/ Planning Reflection)

The children selected a group to collaboratively research one of the identified environments, jungle, grassland, desert or the Australian Bush, and an adult supported each group. The teachers enabled collaborative work on the research tasks, and formulated the problem of understanding the relationship of animals within their habitats that required collective effort for solution. The research process gave children responsibility for active research into the inquiry.

An example of the research follows:

Whilst drawing a representation of some Australian flora, one of the children asked: "*How do Australian flowers grow when we don't plant them or water them?"*

The children shared their theories…

El: Because they are special and they grow.

A: Really special… they grow on their own.

T: They not grow… If not put water not grow, if put water they grow.

A: No. It can grow on their own.

E: Because it rains.

T: If not raining it not grows... if sun comes out it grows.

El: When it's raining and sun comes up they both make it grow.

Teacher: How do they make it grow?

El: Because it gives them energy to make it grow.

U: When rain comes down, instead of you watering it, the rain does.

Teacher: Why do they grow all by themselves?

Th: Maybe rain and sun make the Australian plants grow.

Teacher: How does the rain and sun make them grow?

Es: Rain and sun make a rainbow.

U: Sun gives them energy so they can grow really big.

(Document/ 2006/ Transcript)

This conversation illustrates the collaborative inquiry process, and constitutes evidence of a community of learners and the development of the children's everyday knowledge into scientific knowledge as the children explore the concept of how plants grow.

The Year 5 & 6 Inquiry

Planning documents stated that at the time of selecting the topic as a project, the 5 & 6 complex was the focus of a research project, "Designing from the inside out", commissioned by the Victorian Minister for Education and Training and funded through the Victorian Schools Innovation Commission. Mary Featherston, an interior designer, had selected the Year 5 & 6 complex for the project with the goal that the complex should reflect the contemporary nature of the school's pedagogy. Analysis of the data found that an idea was proposed for the children and staff to be involved with Mary Featherston in the re designing of the Year 5 & 6 complex as co researchers. Ongoing meetings between the mentor, Mary Featherston, and the teachers took place. The designer introduced the project to the children through a workshop.

The first task allocated to the research teams was to *List all the experiences within the 5/6 unit.* The children created mind maps, however it was noted in the analysis that when they tried to compile the information from the mind maps, it was found to be too time consuming. The activity was repeated with the children writing each experience on a separate piece of paper and combining each listed item to make a collaborative mind map. It is evident in the analysis of these tasks that the activity was an authentic part of the research, as the investigation could not proceed without the relevant data to inform the next phase of the research. The

experiences were identified and collated in relation to twelve different environments, with several activities possible within each environment.

1. Small group discussion
2. Study area
    a. Quiet concentrating activities
    b. Time out and alone with others
    c. Individual research /study
3. Entry Gallery and Circulation
4. Storage area
    a. Bulk store
    b. Teacher Personal storage and preparation
    c. Student personal storage
5. Making and experimenting - wet (wet messy activities)
6. Making and experimenting dry (construction and robotics)
7. Making and experimenting digital (Multimedia production)
8. Active and large groups (audio visual presentation and performance drama music)
9. Workshop
10. Targeted teaching
11. Teacher/ student conference
12. Reading and games

(Document /2006/ Planning)

Analysis of the process found the children were separated into twelve project research teams by choice; each teacher facilitated four teams through workshops and target teaching. Evident

in the data is the ability for both the teachers and the children to make selections of their research inquiries, taking into account their particular areas of interest. For example a teacher with an art and theatre background worked with the students interested in visual and performing arts on the active large group space and the art studio.

It was noted that the designer provided each team with research questions and a design brief format, sharing her expertise of the elements that need to be taken into consideration in the design research project. The questions were:

> What are all the things a designer needs to know to design the space, furniture and equipment for this activity?
>
> Describe the activity.
>
> How many people doing the activity? Individual, pairs, small group, large group
>
> Does it need furniture? If so what sort? Sizes & heights?
>
> Does it need lighting, power, and water?
>
> Does it need storage or display?
>
> Any other special needs?
>
> What 'feel' does it need?
>
> (Document /2006/ Planning)

It was also noted that the research by each team involved some students participating in excursions, visiting real contexts such an artist's studio, theatre, office, furniture manufacturer and interviewed people working within these settings, connecting the research to the community and culture of the children.

The study found that these elements of engaging with professionals, working towards a research outcome that would be implemented to enact change, created a process that enabled a collaborative authentic project by the community. The findings show how, in documenting their outcomes, the children reflected on their purpose of research and what they wanted to achieve for their area of design. For example the children designing the entry space noted,

> We wanted the 'Entry' to our unit to be comfortable, relaxing, calm, peaceful, quiet, welcoming, pleasing to the eye, colourful, non confronting.
>
> We wanted our sign in boxes and notice board to be closer to the door entry. We wanted a notice board wall and a place to display models. We thought of having beautiful things such as flowers in our entry area too.
>
> Students should take turns bringing in music.
>
> More hands on displays like at Questacon, Canberra.
>
> (Document /2006/ Student Reflection)

Teacher reflections on the process highlighted the teaching strategies of collaborative learning, discussion, student voice, use of various learning styles to make explicit the ideas developed.

> Students worked in pairs and assigned different roles in order to look at all aspects of the entry area… During the brain-storming process it became apparent that students had a strong view about including the environment as well culture into their final designs. Students wanted school to be like home and their natural surroundings. It had to be a space that was non-threatening but extremely inviting. All members of the group sketched designs of what they thought were needed and what the entry area should look like. At our Design Presentation night students re-created their ideal entry area for parents to visualise. Everyone had the opportunity to reflect upon, and examine the choices made.
>
> (Document /2006/ Teacher Reflection)

Evident in the data was the designer's use of her expertise to provoke the learning opportunities of the teachers and children. A planned excursion by the designer, for the children investigating the entry space provides an example of this,

> Where could we go to experience unusual and dramatic 'entries'? The entry to the shrine is very dramatic and emotional. To visit the centre one goes underground.
>
> (Document /2006/ Planning)

The complexity of the experience of designing the learning space was noted in the student reflections on the experience.

> We started to become friends with our group members. This term we have designed the Entry to our Unit. It was quite hard. You had to ask people if they would like that style of things and what they think would be good for the entry. We decided to organise a Culture survey and found that students come from many cultures. People in our group were from all different places such as Lebanon, Scotland, Russia, China, Cambodia and Mauritius. We used disposable cameras to take photos of things from our own culture.
>
> (Document /2006/ Student Reflection)

It was noted in the data gathered that teacher reflection on other design spaces highlighted similar themes of authentic research, problem solving, collaborative decision making. This was evident in a teachers' documentation of the process below.

> There was a lot of discussion about what was needed in the studio lab and how the lab could be enhanced. Students worked in small groups brainstorming, drawing plans, reflecting and finalising ideas. Students had to think about spatial constraints and the budget they would be working with. They researched possibilities and made telephone calls to prospective companies. Many real life skills were utilized during the selection process and students worked as adults confronting adult problems that had to be

> resolved along the way.
>
> (Document /2006/ Teacher Reflection)

> The design project provided students with an opportunity to design an environment for their learning; Pupils acknowledged the fact that workshops were an important aspect of schooling and decided that a specific room was required.
>
> In workshops teachers provide students with enabling skills that will assist them in completing project-based enquiries. These workshops become discussion forums and also include kinaesthetic as well as written activities. Hence we designed a room that was flexible but at the same time provided students with furniture to take notes. The design journey started with traditional solutions straight rows of desks – but the one student sent the thinking in a very different direction…
>
> (Document /2006/ Teacher Reflection)

Analysis of documentation of the group showed the children thought deeply about the experience of a workshop and the different possibilities and physical requirements needed. At times all children need to be facing the front for a film or presentation, other times an open space was needed, for example for drama, while at other times children needed to be in groups, for example for discussion. The children researched possibilities and presented the concept of tablet chairs, which could be moved to face the front, moved into groups or moved to the side of the room. This was a possibility that the adults had not contemplated. The children designed the chair with a basket underneath to put their work folders. The chairs were produced by a company in Melbourne and used in the workshop space.

> Storage of student's belongings provides students with a place to store their belongings but also a sense of ownership in a learning environment.
>
> It was important for the furniture to be visually aesthetic but also to serve its purpose. A trip to the showroom and factory of a furniture manufacturer allowed students to

> physically test different sized lockers and understand the importance of height, capacity and appearance.
>
> (Document /2006/ Teacher Reflection)

A section from a document detailing a research project contained a teacher's reflection on the involvement of the children in the research project.

> Students were extremely excited about having a potential theatrical space that would promote creative thinking, acting and performance. You could not dull the enthusiasm and passion generated by this group. Each member seemed to be spilling over with ideas about what the space should look like, how big the rostrum should be and where all of the props and costumes would be stored. A small group began researching and examining dramatic spaces using the Internet and books. A lot of drawing took place and mapping out their ideas. Measurement was an important part of the process and the students had to estimate and then confirm length and width for curtains, rostrum and storage cupboards. Students had to shop around for the best prices and forward faxes to companies in order to obtain brochures that would help with the final selection process. A visit to the Frankston Arts Centre helped the students to strongly visualise their ideas and to concrete what was important to them. Critical thinking skills were employed and students had the opportunity to make their dream a reality.
>
> (Document /2006/ Teacher Reflection)

Problems being examined involved real life issues requiring a solution. As highlighted in the quotations above,

> Students had to think about spatial constraints and the budget they would be working with… was important for the furniture to be visually aesthetic but also to serve its purpose… and the students had to estimate and then confirm, length and width for curtains, rostrum and storage cupboards. Students had to shop around for the best prices and forward faxes to companies in order to obtain brochures that would help with the final selection process.
>
> (Document /2006/ Teacher Reflection)

The following excerpt from a reflection written by the designer outlined the designer's recollection of such an issue.

> Many discussions with staff and students tried to find a suitable location to place the lockers outside the unit to provide easier access and make more space in the Unit. Finally it was decided to use the lockers within the Unit not only as storage but also as spatial division and additional display space.
>
> (Document /2006/ Designer Reflection)

It was again noted here that the research involved engagement with experts in the field; examples of these were highlighted in the quotations:

> Where could we go to experience unusual and dramatic 'entries'? The entry to the shrine is very dramatic and emotional. To visit the centre one goes underground…A trip to the showroom and factory of a furniture manufacturer allowed students to physically test different sized lockers and understand the importance of height, capacity and appearance...A visit to the Frankston Arts Centre helped the students to strongly visualise their ideas and to concrete what was important to them.
>
> (Document /2006/ Designer Reflection)

The data also revealed that skill development took place in authentic contexts:

> the brain-storming process ... All members of the group sketched designs of what they thought was needed and what the entry area should look like ... students re-created their ideal entry area for parents to visualise… A lot of drawing took place and mapping out their ideas. Measurement was an important part of the process and the students had to estimate and then confirm length and width... Students had to shop around for the best prices and forward faxes to companies in order to obtain brochures ... Critical-thinking skills were employed.
>
> (Document /2006/ Teacher Reflection)

Analysis of the process of research found that within the Year Prep community the process was teacher guided, with the teachers listening intently to the children's ideas and determining the next phase of the research. The children were active participants in the research process. In contrast, for the Year 5 & 6 children the process was authentic research, with students identifying issues and possibilities. The children engaged in skill development within the authentic contexts with real life purpose. They engaged with experts in the fields they were investigating. The children identified that the process of research was challenging, as they needed to ensure they took into account the perspective of the community members. *It was quite hard. You had to ask people if they would like that style of things and what they think would be good for the entry.* (Document /2006/ Student Reflection)

Research techniques were utilised by the students.

> We decided to organise a Culture survey and found that students come from many cultures. People in our group were from all different places such as Lebanon, Scotland, Russia, China, Cambodia and Mauritius. We used disposable cameras to take photos of things from our own culture.
>
> (Document /2006/ Student Reflection)

A teacher highlighted the challenges faced by the students:

> Students had to think about spatial constraints and the budget they would be working with. They researched possibilities and made telephone calls to prospective companies. Many real life skills were utilized during the selection process and students worked as adults confronting adult problems that had to be resolved along the way.
>
> (Document /2006/ Teacher Reflection)

> This process of research followed into the next phase of the project, Making the Learning Visible as identified by a teacher: At our Design Presentation night students

re-created their ideal entry area for parents to visualise. Everyone had the opportunity to reflect upon and examine the choices made

(Document /2006/ Teacher Reflection).

The findings show that the children formulated their own understandings of the concepts, while the teachers, through creating the learning activities, connected the subject matter with the children's everyday concepts (Vygotsky, 1987). The research study found that the children were at this point consciously aware of the concepts and could now analyse them within the context of the research, enabling the new knowledge and skills to influence the child's own person, their ability to research their own problems, and their interactions with the culture and the society in which they live.

8.5.2.4 Making the learning visible.

In Year Three, the making the learning visible phase had as its purpose sharing the findings of the community of inquirers, making a difference as a collective in that community.

Year Prep Inquiry

The data showed that the community looked at a means to make the learning of the children visible. Analysis of a transcript of a discussion with students shows a teacher asking the question:

If we want to show all our families and the whole school what we have learned in our animal investigation, what are the things we want to tell them?

Je: Savannah is where Wildebeests live.

Th: We learned that habitat is where the animals live.

El: We've been talking about omnivores.

S: Omnivores… eat plants.

F: A carnivore is when a lion and a tiger eat meat. Omni eats plants and flowers.

(Document/ 2006/ Transcript)

It was noted in the data gathered that a teacher, whilst overseas in South Africa, came across a community centre that had a felt mural with moveable pieces. She documented the experience, creating a presentation to share this idea with the teachers and children. Analysis of this process illustrated the role of teacher as a researcher. The outcome resulted in the community commencing the process to create a mural (Photo 8.1)

Photo 8.1. Creating a community mural

Evident in the data was the process used to create a mural (Photo 8.3). A collage of detailed drawing by the children was compiled into a mural. A copy of the mural was made so children could experiment with colour using watercolour paint. Colour selections of the felt were made to represent the different environments and the children also created felt, using a process researched by one of the teachers. Another copy of the mural was used as the pattern to cut out pieces of felt. Parents and helpers came in to help the children make the felt as well as to help the children cut out and stitch their felt pieces. The children's original animal drawings were copied onto iron on transparency, which a grandparent then made into 3D stick on characters (using Velcro). (Photo 8. 2)

Photo 8.2. Velcro animals

It was evident that the collaboration among parents, teachers and children involved in the process developed the project into a community project, enhancing the parents' understandings of the learning process. It was decided that the animals for the mural needed to be moveable, and this allowed both the scientific concepts and also fantasy concepts of the animals to be enacted.

Photo 8.3. Mural

<u>The Year 5 & 6 Inquiry</u>

Analysis of the process of making the learning visible found the children provided their responses to the research questions through an oral and technological presentation, an interview with the designer and a collection of artefacts. The findings show that the designer

used research from children and discussions with teachers to prepare a floor plan design, which was modified several times as a result of further discussions (see Chapter Three).

Photos 8.4. Year 5 & 6 Learning complex

A parent exhibition evening was held to make the learning visible to the community. During this evening the project was outlined, the children presented their research and the designer presented the final design (Figures 8.1 & 8.2).

Analysis of the data indicated that the process of making the learning visible was similar for each year level, and various mediums were used to document the journey and the outcomes of the research. This differed from that the process in Prep where the teachers played the lead role in compiling the documentation of the learning process; in the Year 5 & 6 complex the children documented the learning process and made this visible though display panels within the learning complex (see Figure 8.3).

Figure 8.1. 3D model of Year 5 & 6 Complex Mary Featherston

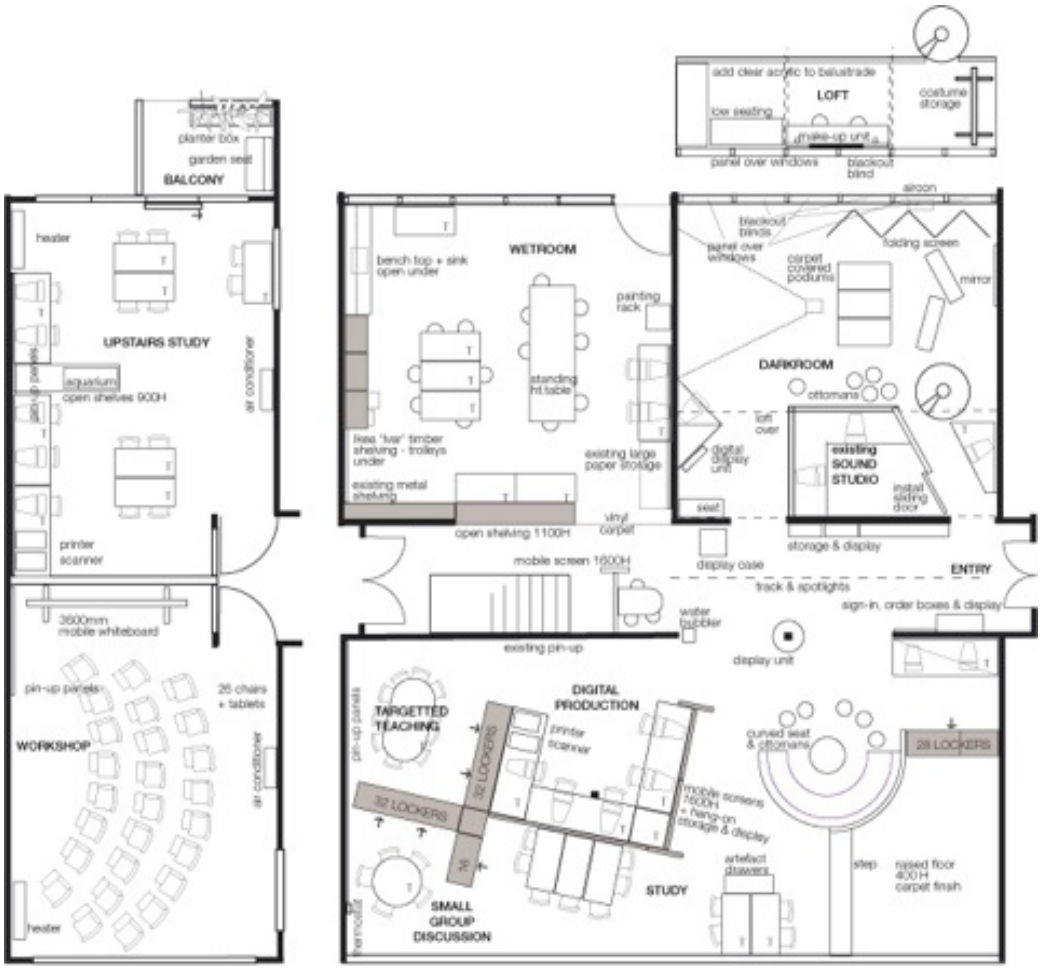

Figure 8.2. Floor plan of Year 5 & 6 Complex Mary Featherston

In the process of making the learning visible, the theoretical level of knowledge was evident in the Prep children's understandings of relationship in regard to species and between species of animals, to habitats and to environmental factors. The Year 5 & 6 children's understandings were made visible at the theoretical level in regard to an understanding of design and the design process.

RELAXING reading, chatting + game play

Student Reflections:

We started to become friends with our group members. This term we have designed the Entry for the Unit. It was quite hard! You had to ask people if they would like that style of things and what they think would be good for the Entry. Our group knew what type of style they wanted.

Our Entry Group, decided to re-create the entry part of the unit. We all worked together to re-create the entry. We wouldn't be able to finish things if we didn't work as a team. The people in our group helped us even if they couldn't be here for the Design Presentation Night. We were all happy to work with each other.

We decided to organise a Culture Survey and found that students come from many cultures. People in our group were from all different places such as Lebanon, Scotland, Russia, China, Cambodia and Mauritius. We used a disposable camera to take photos of things from our own cultures.

Wire 'drawing' of settee

Researchers:
Philip Petreski, Prashant Chandar, Joel Kennedy, Wade O'Neill, Stephanie Andjelkov, John Bacon, Belinda Hosking, Paul Collins

"What should the space be like for reading"?

"A quiet place to escape yourself. Comfy and cosy like in your room".

"When you're home in bed feeling—relaxing, not tense, no need to worry about anything, you can just forget everything and read".

"Dark space with lights – because it feels more comfortable like relaxed like at home in bed".

"Patterns ... like peaceful water reflections".

"There should be quiet relaxing music playing. Music on computers is not so good. It's too noisy".

"Adding a table next to the couches for the parents and teachers would be a good idea. We could also read while we were working".

"I want to move the couches so that parents can feel welcome to our unit. If they are waiting for their child they can come and wait inside".

"The upstairs right room is good for reading – because it's mostly quiet. Downstairs it's a lot noisier".

"The loft would be good for reading groups – 10 people say or 5-6 people".

"The (existing loft) is very quiet and good for reading. A good area to relax when you feel a bit sick – it has lots of space to play games".
"When you walk up the stairs to go to the loft and get your work it will make a big noise and will distract everyone". (suggestion to put carpet on the stairs.)
"The loft is a bit dangerous because you can fall through the gap in the fence. It is interesting when you go up to read you are on a different level and you can see above other people. other schools don't have a loft".

What kind of furniture would be needed?
"Soft chairs – single chairs, ball chairs – if your back hurts you can lay back in them".

"Bookshelf for books and cupboard to put games in and an area to store your own individual books".

What sort of area for games?

"We need a different space for noisy game area and quiet game area".

"Some maths and reading games are individual".

"You need to concentrate with maths games too, like Nubble, cause you have to work it out".

"Maths games – Nubble, Monopoly, Number rings, Guess who, Chess, Reflections – character analysis, Jumangi Making new books, Reading all kinds of books, Charicature, Charades, Uno".

Investigating lounge furniture catalogues

Would the 'loft' be a Quiet Area? Plus, Minus and Interesting Chart

Looking down into the Entry to the Visitor's Centre - Shrine of Remembrance

... entry to the city

Figure 8.3. Panel display on Year 5 & 6 research project

8.5.2.5 Reflection by the learning communities.

Data analysis shows that ongoing reflection as both a group and individually was an embedded aspect of the inquiry process.

<u>The Year Prep Inquiry</u>

It was evident in the data that a reflection on the inquiry showed the children's theoretical thinking regarding their concepts about relationships. A teacher asked:

> What are relationships?
>
> U: I have relationships with my mum and dad and whole family.
>
> Ry: I have one with my sister.
>
> Teacher: So how about animals…what relationships do animals have?
>
> K: What about the animal's environment ... they live in environments.
>
> J: Some animals have savannah and grass to eat.
>
> Ry: maybe with trees.
>
> U: or with other animals.
>
> N: or the plants.
>
> T: All animals like plants to eat and grass and leaves.
>
> J: or flowers
>
> T: Hyenas, cheetahs, lions eat meat.

Ann: Tigers eat meat. It catches other animals and eat them.

J: I thought animals was vegetarian.

(Document/ 2006/ Transcript)

The Year 5 & 6 Inquiry

The designer documented a reflection on the shared findings of the inquiry.

What have we learnt?

Pedagogy and design of the physical environment are interdependent.

Contemporary pedagogy requires a new spatial typology for communities of learners & teams of teachers.

A wide diversity of 'settings' is needed to support rich, social and learning experiences.

Design of the physical environment includes several 'layers'

- Built environment - Furniture - Loose Items.

The physical environment can be a 'teacher' in itself.

(Document /2006/Designer Reflection)

The data gathered indicated that the reflection process in the community inquiries of the Prep Year occurred on two levels, with the Prep children making visible through conversations their new understandings of the relationships of animals and the world, but also the teachers reflecting as researchers, on how they were making possible a relevant and meaningful learning context for children. The reflection process of the Year 5 & 6 inquiry had certainly impacted on the children as they reflected on the process of learning and research. Moreover,

the collaborative research process of children, parents, teachers and a designer resulted in new understandings of the relationship between contemporary educational pedagogy and physical design of educational settings.

8.5.2.6 Conclusions.

The four inquiries, which have been examined in this case study, Year Prep *Relationships* Year Three *Identity* and *Sustainability* and Year 5 & 6 *Design* each reflected similar traits indicating common key principles and beliefs underpinning the shared practice.

In each case, the interests of the children were taken into account in determining the content used to explore the concept under investigation. This process is consistent with Hedegaard and Chaiklin's (2005) double move approach as discussed in Section 3.5.7, which they describe thus: "By using subject-matter concepts, integrated into core models to analyse everyday local activity, teaching provides children with new skills and possibilities for action" (p. 59). Fleer (2010) further explains:

> Hedegaard (2002) states that theoretical knowledge and thinking methods use both empirical and paradigmatic thinking with narrative knowledge and methods to help children bring together their own personal knowledge with abstract knowledge. It is through the appropriation and transformation of subject-matter knowledge that children develop personal cognition (p. 56).

The analysis of the inquiry research projects indicated the development of theoretical knowledge in regard to the concepts of the relationships of living things and the design process used and enhanced both narrative and empirical knowledge to bring together *new skills and possibilities for action*. The children's *personal knowledge and abstract knowledge*

were aligned, leading to the development of *personal cognition.* Evident is what Davydov (2008) argues:

> the task of theoretical thinking is to rework the data of contemplation and conceptions in the form of concepts, and thereby to fully reproduce the system of internal connections that give rise to the given concreteness and reveal its essence (p. 100).

The community of inquirers have, like the Year Three community, unpacked the essence of the concepts. In the case of the Year Prep community, these concerned the relationships of living things and in the Year 5 & 6 community the concepts were pertinent to the influence of the design process on aesthetic aspects and purposes of spaces and visa versa.

The journey of the inquiry was co-constructed with teachers reflecting on documentation of the children's thinking and evidence of learning to inform future planning. This demonstrated the *mediating role* of the teacher planning aligned to the principles of *conceptual and contextual intersubjectivity* (Fleer, 2010*)*. This process leads to creating a zone for potential development (Kravtsova, 2008), as described in Section 2.3.6, a social and cultural world that lies within the child's sphere of engagement which leads to creating an individualised zone of proximal development (Vygotsky, 1978, p. 86) where engagement with a more capable other can lead to actual development. This process is evident in both community research projects. Creating a zone of potential development was evident within the exploration of prior knowledge and immersion phases of the projects. For example, in the Year Prep project, the zone of potential development was created through experiences engaging with animals; the children were interested in these experiences and the teachers saw the possibilities to investigate the concept of relationships through the exploration of this content area. The findings in the Year 5 & 6 project show that the zone of potential development was evident as

the children described, through various mediums, how design influenced their lives. The teachers took the content areas of interest in Design and further extended the children's knowledge to provoke connections to the concept of Design. The zone of proximal development was made possible in each of the projects through the development of active research projects. In the Year Prep complex, this included the children's selection of habitats within Australia to investigate, and within the Year 5 & 6 project the children's selection of areas of the learning complex to re-design. In both instances the children learned about the process of research and the interrelated elements of the relationships of life on earth for the Prep community, and of the relationships of design to function and aesthetics within the Year 5 & 6 community. Actual development was evident in the designs created by the Prep children of habitats of the animals and the arrangement of these on a mural, and the design briefs created by the Year 5 & 6 children. Table 8.1 aligns the possible zones of development with the phases of the design process.

Table 8.1
Zones of Possible Development within the Inquiry Process.

Zones of Possible Development	Inquiry Process Phase
Zone of Potential Development	Exploring Pre-existing Understandings
	Immersion phase
Zone of Proximal Development	Formulation of Research Question
	Research process
Actual Development	Making the Learning Visible

The analysis of the data indicates that the process of the inquiry study at the school aligns to Hedegaard & Chaiklin's (2005) research, which led to the formulation of the following principles for motivating children within the double move approach:

> 1.Take the children's dominating motive into consideration when formulating the subject area of a teaching course. The dominating motive in early school children is orientation and curiosity towards the world around them, for 9-11 year-old Danish children we formulated this as curiosity about the questions of life (e.g. Where did we come from? Have the animals always looked alike? Why do people live differently?).
>
> 2. Give children responsibility for active research into the content of the subject area of the teaching course, and help them gain knowledge of the basic relations in the subject area so that they can formulate their own understanding (core model) and research their own problems.
>
> 3. Use the social life of the class. Children in a classroom setting often care more about the opinion of their peers than the opinion of the teacher. We benefit from this interest by supporting collaborative work on research tasks, and formulating problems that require collective effort for solution (2005, p. 80).

The findings show the similarities in the research projects are reflected in each of the points:

1. Taking *the children's dominating motive into consideration when formulating the subject area of a teaching course* was evident through connecting the children to the concepts under investigation through areas of interest, in the Year Prep community through the topic of animals, and in the Year 5 & 6 community through the interest topics of art, architecture, inventions and fashion. This helped develop a learning motive.

2. Giving *children responsibility for active research into the content of the subject area* was evident through the research projects of investigating habitats within Australia by the Prep community, and the re designing of learning spaces by the Year 5 & 6 community. *Supporting collaborative work on research tasks* was evident as the research projects were whole-community based. *Formulating problems that require collective effort for solution* was evident again in the collaborative research questions formulated and the research method

approach used by the teachers. As indicated above the teachers: "*Take the children's dominating motive into consideration when formulating the subject area of a teaching course"* (Hedegaard & Chaiklin, 2005, p.80). Hedegaard states *The dominating motive in early school children is orientation and curiosity towards the world around them, for 9-11 year-old Danish children we formulated this as curiosity about the questions of life*.

The analysis of the research indicates the dominating motive for the children's engagement differed between the Year Prep, Year Three and Year 5 & 6 age groups. This variation in children's motives and the concept of *obshchenie* (the relationship between learning and development) where development and learning are entwined and children become the subject of their own learning (Fleer, 2010) will be examined in the next section through analysis of the data using a personal lens of analysis.

8.6 A Personal Lens Perspective

The analysis of data has demonstrated that a child's position within an institution is a determinant of the child's participation. Bozhovich (2009) outlines two conditions dictating the child's position within the institution:

> Children's positions are determined by two conditions: first by the demands of the social environment that have developed historically and are placed on children of a particular age (from this perspective we can talk about the position of the pre-schooler, the schoolchild, the working adolescent, the dependent, etc.); second by the demands the people around them place on children based on their individual developmental features of a particular child and on the specific circumstances for the family (Bozhovich, 2009, p. 78)

The two conditions of institutional practice defined by Bozhovich require teacher awareness of the impact of these conditions and their response to the conditions, creating optimum

conditions for learning and development. One required response is to reflect on and question the historically developed, educational expectations placed upon children at certain ages within the educational institution. Another is to develop expectations taking into account the current context of the learners and their community. This process enables new perspectives and possibilities to be facilitated.

The data from the Year Prep, Year Three and Year 5 & 6 complexes have demonstrated that the historical demands of a school institution with a teacher dominated program, in which children are required to meet the expectations of the program, has been modified to a co-constructed program valuing the varying positions of the child possible within the practice, that of collaborator, questioner, leader, provoker as well as responding to provocations and modelling of practices. The data have demonstrated similar practices at each year level, though there were variations of participation among the year levels, as the program was co-constructed responding to the children's prior knowledge and skills, taking into account the current context of the children, with the goal of developing learning opportunities that would lead to the development of new psychological functioning and perspectives of the context in which they lived. The focus here was on examining the motive of the child to participate and taking up the position of collaborator and active participant within the programs developed within the institution.

Hedegaard and Chaiklin (2005) state:

> During school age the child's motives are dominated by the learning motive, which both lets the child orient himself to knowledge about the world in general, and to specific skills appreciated in his community. The schoolchild becomes oriented to topics that are valued by his parents, by the community, or that the child finds new and exciting to explore. The school child's social motives and play motives are still important. (p. 80)

Acknowledgement of these motives in the Danish research led to the formulation of principles for motivating children within the double move approach (Hedegaard & Chaiklin, 2005), taking the children's dominating motive of curiosity and orientation into consideration when formulating the subject area of a teaching course. This is followed in the Danish study by giving children responsibility for active research into the content and relations within the subject area under investigation so that they can formulate their own understanding and research their own problems. Using the social life of the class, valuing peer relationships supporting collaborative work on research tasks, and formulating problems that require collective effort for solution are all features of development based on a learning motive (see also Hedegaard & Chaiklin, 2005, p. 80). Analysis of the data in Section 8.5 above demonstrated that within each of the inquiries, these elements responding to the child's learning motive were embedded in the programs at the school, however these elements also responded to the play (creative) and social motives of the child, in varying ways at each level.

The Prep teachers, in an interview, discussed the motives that the children brought to the Prep Complex:

> I think the kids come to school incredibly motivated I mean incredibly interested in exploring things … they want to find out things, they have questions, so it's using that

> as a basis for their learning and as soon as they realise that their comments are being listened to and respected and used as a basis for learning I think they're incredibly excited and motivated to learn and actually want to and it is suggested, that they can actually follow through with them (questions).
>
> (Interview/ 24/02/07 / Teachers Year Prep)

This quote highlights the acknowledgment of the curiosity the children bring with them, a combination of a learning motive and a play motive. They discuss how the teacher values these motives – *their comments are being listened to and respected and used as a basis for learning* (Interview/ 24/02/07 / Teachers Year Prep).

The following interview excerpt highlights the Prep teachers' awareness of the social motive of the children.

> If there's one child that has a real interest or a real passion that they bring to the school or to the classroom or wherever, to the environment, often that will sort of impact on the other kids as well.
>
> I'm actually thinking back to (a child) and his incredible, knowledge of animals and interest in animals and how it got other children excited too because he would get so excited about it.
>
> So I think the motivation not only comes from within and their own, interests and passions but also from what their peers and other people and other things going on around them, and so even their experiences outside of home, always, questioning and seeking an understanding of their experiences and then, wanting to share them and explore them further.
>
> (Interview/ 24/02/07 / Teachers Year Prep)

This quote emphasises the influence of the individual child's interests on the learning community and also acknowledges that the children demonstrate the learning motive as a

means of engaging with the world both in and outside of school, *always questioning and seeking an understanding of their experiences, and then wanting to share them and explore them further* (Interview/ 24/02/07 / Teachers Year Prep).

Analysis of the data shows that the Prep inquiry project of *Relationships* valued the children's interests in animals, and the teachers' goal to develop the children's concept of relationships. Building on the children's interest in animals engaged the children's learning motive with its objective of interacting with their world. The children's play motive was also engaged through the experiences provided and their social motive encouraged through the sharing of these experiences. The children's experience of interactions with the animals was promoted by events such as the animal farm visit, the pet visit and the Zoo experience. In their activity in groups such as discussions or construction the children moved fluidly between fantasy and reality. A conversation with the Prep children highlighted this point,

Teacher: Are you an animal?

E: Humans are animals because we look like them.

Te: I don't look like an animal.

E: We look like animals and have things like animals.

Ry: We're not animals because we are different. We have two legs.

Mu: I want to be an animal.

Co: Yes, I'm a tiger.

An: I'm a duck.

T: I'm an animal – a big elephant

(Document/ 2006/ Transcript)

This aspect of the movement between reality and fantasy was reflected in the end mural, with the animals being movable to either take part in a biological interpretation through being placed in their natural habitat or in fantasy contexts such as running down the streets of the city (Madagascar film enactment).

In a discussion, the Year 5 & 6 teachers noted the deeper complexity of the social motive within the Year 5 & 6 learning complex:

> The fact that, if you go back to the relationship, that we're learning together and you value their insights and their thoughts and the ideas, their motivation is to, to show you and to learn together and to go further and deeper into what they know. They know that their ideas are valued so they want to go further.
>
> And I think too on a social level it's more a participation thing with others, so that they can actually engage in interesting conversations.
>
> It's about validation, being validated by your peers and, you know, knowing that you are valued, and then once you get that validation you want it again so you are sort of motivated.
>
> The friendships they form (Teacher-yeah) and the relationships they have…Empowerment.
>
> (Interview/ 13/03/07 / Teachers Year 5 & 6)

The interview indicates that social motive at this year level developed into one of collaborative learning relationships with the teachers, *we're learning together and you value their insights and their thoughts and the ideas, their motivation is to, to show you and to learn together and to go further and deeper into what they know. They know that their ideas are valued so they*

want to go further. The social motive also reached a deeper level through the metacognitive awareness in the children of the benefits of collaboration: *on a social level it's more a participation thing with others, so that they can actually engage in interesting conversations… It's about validation, being validated by your peers and, you know, knowing that you are valued and then once you get that validation you want it again so you are sort of motivated.* This validation also led to a sense of self, indicated through the comment by the teachers, of the impact of the learning experience influencing *the friendships they form (Teacher-yeah) and the relationships they have.* The data indicates Year 5 & 6 learning motive was also taken to a higher level with the children's learning impacting on the community of learners and the community at large. This was highlighted in the Design project, with the outcomes of the research impacting on other educators and designers, beyond the school community. The teachers were aware of the need for the children *to be able to see the purpose to them, to make sense of the world in which they live* (Interview/ 13/03/07 / Teachers Year 5 & 6). This was achieved through the projects being authentic and having real world applications. The teachers discussed the effect of this on the child's perception of themselves as learners,

> And even making it the link between school and home because everything is so, it's authentically problem based and challenging; the links are so similar.
>
> A curiosity that may have come from outside of school, they wonder about … it's exciting.
>
> They can take it [Learning] out into their real world and it's easy, to expand on it with things that they know and progress from there to challenge themselves.
>
> (Interview/ 13/03/07 / Teachers Year 5 & 6)

Conversations with the students and examining the documentation of shared experiences showed that the teacher played a crucial role in interpreting the next stages of the project

direction in the Year Three data inquiry projects of *Sustainability* and *Power*. A transcript from an interview with the teacher states she saw her role was to *seek to engage children in ways, ways that motivate them to become more interested or to own it for themselves more over time.* She identified that *some things that they come across that they are naturally motivated to learn,* however she believed in other cases there was a need to provoke a motive, *I think we need to find ways to – present an environment or create an environment that shows them – or stimulates them to see what's important about that, what's interesting about that, what's knowable about it.* (Interview /27.02.07/ Gemma / Teacher Year Three) The analysis of data indicated the social motive of the children was to belong to the group and be part of the shared community experiences, the play motive was the enjoyment of the multiple shared experiences, walking to visit the road building site, walking to complete water tests of the local creek and producing films about aspects of social interactions. The learning motive was identified as the goal of the children to understand their world, as highlighted in the multiple questions they explored about the physical world, for example, water cycles, plant life, food chains, solar system, ecosystems and their participation in the discussion influenced by aspects of their world, such as discussing identities, the discussion of super heroes, television programs and music. Table 8.2 compares the social, play and learning motives of the three year levels.

Table 8.2

Children's Motives of Participation

	Social Motive	Play Motive	Learning Motive
Year Prep	To engage in activity.	To engage in their world through improvisation.	To interact with their world through experiences.
Year Three	To belong to a peer group.	To experience the reality of their world.	To understand their world.
Year 5	To develop an individual identity.	To use metacognitive thinking to create, and analyse.	To impact on their world.

The research questions following on from determining the motives of the children to be engaged with their learning take on a new focus: How can learning be developmental? How can curriculum content contribute to a child's psychological development?

El'konin (1999) as discussed in Chapter 2.3.1, has described children's personality development as progressing through three main periods (early childhood, childhood, adolescence). Each period is seen as reflecting the traditions of practice in institutions of the societies in which they occur such as family/day-care, School/after School, and the workplace. Movement from one period to the next is seen as reliant on qualitative changes in the child social situations (Vygotsky, 1998) that are related to a change of institutional practices. The conceptualisation of what is expected and what possibilities are presented to children within these institutions can be reflected in a different light when aligned to the relationship between children's development and learning, focusing on motive development, and drawing upon cultural-historical theories of child development.

Hedegaard and Chaiklin (2005) outline El'konin's theory of child development,

> In the D. B. El'konin theory each period contains two stages that are characterized according to the relative dominance of motive in competence. The first stage is characterized primarily by motive development, while the second stage is characterized by knowledge/skill appropriation that is needed to realize the motives formed in the first stage. The appropriated knowledge and skill gives the possibility to participate in new practices, which opens the way from the acquisition of new motives and new period of development in which the further development of these motives are the focus of this period's first stage. (p. 62)

The following points summarize Hedegaard and Chaiklin's (2005) conceptualization of child development:

- Children's psychological development takes place through a creative reproduction of cultural practices through interaction and communication with other people in these activities.
- Through these practices they appropriate cultural needs, motives, skills and knowledge.
- These appropriations take place through interaction and communication, primarily in institutional practices which become contexts for the child's personal activities (i.e., the family, the school, the afterschool).
- Institutional practice can initiate change in a child's personal activity. Interactions, opposition, conflict between significant adults' demands and the child's motivations for joining an activity, or his self-initiated activities can impose this change. (p. 63)

The teachers' role aligned to El'konin's development theory is to respond to each period's stages taking into account the characterisation of the relative dominance of motive in relation to the current competence. In the first stage the teachers need to recognise the children's motive, supporting the possibilities to engage with the second stage, while in the second stage,

they should support the development of knowledge/skill appropriation that is needed to realize the motives formed in the first stage. The development of the appropriated knowledge and skill gives the possibility to participate in the new practices, which enables the acquisition of new motives and a new period of development in which the further development of these motives are the focus of this period's first stage. This approach was echoed in the development of the children throughout the school as indicated in Table 8.2, through the changing motives of the children and the variances in the understanding and skill levels of the three inquiry projects examined. Evidence of children's motives for participation, seen as culturally created at each year level in this table, was aligned with the development of new skills and understandings. These elements are evidenced in the data as the complexity and participation of the children increased in the research projects analysed, moving from creating a mural of the interrelationships of animals with each other, animals and humans, to film making involving making explicit the values associated with meaningful friendships, and a campaign to enhance the community's awareness of environmental sustainability issues, to re-designing, with an expert designer, the learning environments within the school. This analysis provides evidence of a qualitative change in the child's relations to the world and these could be seen as markers of new periods in development of the children at each level of the school.

Aligned to Hedegaard and Chaiklin's conceptualization of child development, the children's psychological development has taken place through a creative reproduction of cultural practices. This was a product of interaction and communication with other people during the activities embedded in the inquiry, leading to the creation of a felt mural, a film, a sustainability campaign and the design of a learning space. Through these inquiry practices the children appropriated cultural needs, motives, skills and knowledge in growing complexity according to the year level. These appropriations took place through interaction and

communication, primarily through institutional practices outlined in the sources of learning section of the analyses, which developed as contexts for the child's personal activities, initiating change in a child's personal activity through the further development of the concept of relationships, power, sustainability or design. Interactions, opposition, conflict between significant adults' demands and the child's motivations for joining an activity, or developing self-initiated activities imposed this change.

The teachers discussed in an interview their goal of using the children's learning and social motives as an integral part of their planning.

> I suppose, our role is through listening to the children, then to come up with experiences to take their learning further and to scaffold them.
>
> It's about designing and planning isn't it?
>
> But also for us to have a clear idea in our head what understandings we want the children to have and to use that within the context.
>
> Your responsibility is to respond to their passions (developing), an understanding we want them to have as well so using their passions as a way...
>
> A vehicle to reach our goals.
>
> And just being very clear on what the skills we want them to have sort of at the end of the prep year or at the end of, you know their schooling sort or their primary schooling to really consider what the skills we want them to have and within our context and day to day happenings being aware of bringing those skills out.
>
> I think just constantly aware of challenging them and extending on what where they're at.
>
> (Interview/ 24/02/07 / Teachers Year Prep)

The teachers described here their mediating role, building *conceptual and contextual intersubjectivity* (Fleer, 2010), building on the children's learning and social motives: *our role, is through listening to the children, then to come up with experiences to take their learning further and to scaffold them….responsibility is to respond to their passions… to have a clear idea in our head what understandings we want the children to have and to use that within the context…. I think just constantly aware of challenging them and extending on what, where they're at. (Interview)* It is clear that the teachers saw their role as one of a *mediator* linking the learning to the children's community experiences *to have a clear idea in our head what understandings we want the children to have and to use that within the context.* It was noted in the analysis that the teachers made decisions on two interrelated levels, about what were relevant meaningful understandings for the children to develop which would impact on the children's development and how they would connect the children to the activities, engaging with the children's current motives.

An excerpt from the interview with the Year 5 & 6 teachers shows that teachers were aware of the different interests of the children at different year levels,

> But what fascinates me is that children of a similar age group have very similar interests at times and the fact that, they're altogether in an entity, in an environment where they're promoted to think and to learn, and they've all come together with possible similar interests and, they all talk about similar, simulations that are out there and I think that's really nice.
>
> (Interview/ 13/03/07 / Teachers Year 5 & 6)

This interview excerpt demonstrates that the teachers took into account conditions for the activity of theoretical thought (Davydov 1990), through the study of the wholeness of an

object under investigation within a meaningful context, involving *interests* or *simulations* which connected to the children's learning, play and social motives.

This awarenesss led to the development of the Big Ideas concept document (Appendix Three) in which the teachers documented projects aligned to key concepts, though these were explored through areas of interest of the children. Children were also able to move outside of the community inquiries to personalised negotiated inquiries based on areas of interest, responding to the motives of the children.

> And the fact that they can go out on their own, sort of passion projects. A lot of them who have similar, interests and ideas (T-yes) but then there are, may be a smaller group who have, completely different ideas or interests, and that they are allowed to, to explore those and to look deeper into those so that, yes you know there may be a general sort of general course of study but there are also other areas where it can be very individual, and children are very excited about that.
>
> (Interview/ 13/03/07 / Teachers Year 5 & 6)

Hedegaard and Chaiklin (2005) state, "Whether a change in practice or new activities will influence child's development of motives, knowledge and skills, depends on the child's possibility to realize his intentions and create his own goals in these new activities" (p.62). The analysis of the data found that children were able to negotiate their learning from Prep, negotiating their own goals for selected activities in both learning agreement time and in the inquiry projects. Moreover, the complexity of this process developed as the child progressed through the school, such that the children negotiated all of their learning activities in the Year 5 & 6 complex.

The outline in Table 8.2 traces the development of children throughout their journey at the school as they realised their intentions and created their own goals in new activities. The child

from the beginning was encouraged to co-create the curriculum and be an active participant in their learning. Throughout their journey the children developed as individuals and as collaborators, developing an awareness and understanding of the world in which they lived through research into projects relevant to their lives. The children became the subjects of their own learning as they developed through childhood as a contributing participator in society.

8.7 Chapter Summary

This chapter has analysed the community of practice in the Year Prep and Year 5 & 6 complexes, indicating an alignment of the practices with those discussed in the previous two chapters of the Year Three community. Using an interpersonal lens analysis of the settings, the similar relationships within these settings was highlighted. Through an institutional lens of analysis the similarities in the roles of the teachers, parents and children, and the sources of learning were examined. Analysis of an inquiry project from each year level highlighted the similar practices, yet also noted the different participation levels of the children. Examination of the *community of practice* through a personal lens compared the practices when engaging with 5 year olds, 8 year olds and 10 and 11 year olds. This analysis examined the motives for children's learning and its relationship to development aligned to the research of El'konin (1999) on the development of motives and the further research of this development and its alignment to Hedegaard & Chaiklin's (2005) practice of the *double move*.

Evidence of children's motives for participation, seen as culturally created, was examined at each year level and it was noted how the development of new skills and understandings led to qualitative changes in the child's relations to the world, and therefore could be seen as markers of new periods in development.

Each new period of development demanded variations in the interactions of the teachers with the children, requiring teachers to focus on a mediating role, involving focusing on *conceptual and contextual intersubjectivity* (Fleer 2010) in their planning. Analysis also highlighted *conceptual framing* (Fleer 2010), enacted by the teacher through having both the children's *everyday concepts and scientific concepts* in mind when planning the educational activities and the child's motive for engagement with these concepts. The latter takes into account the integration of the cognitive and affective processes of the brain as defined by Vygotsky as *pereizhivanie,* enabled by taking into account the *social situation of development* of the children.

In the next chapter I analyse the data and theorise the conceptual elements that come together to explain the community practices, in turn answering the main and related research questions.

Chapter 9
Research Findings and Conclusions

9.1 Introduction

> For dialectical thinking, there is nothing new in the position that the whole does not arise mechanically by means of a sum of separate parts, but has specifically unique properties and qualities which cannot be deduced from a simple combining of the qualities of the parts. (Vygotsky, Vol. 4 1997, p. 83)

In the previous chapters data and a brief analysis of the case study school were presented. Those chapters also include the theoretical explanations of the conceptual constructs that were used to guide the analysis. In Chapter Six the relationships of the participants in Year Three were analysed through an interpersonal lens (Rogoff, 2003) and a description was provided of how the Year Three children, as dynamic participants, co-created with their teachers an inquiry based learning program. In Chapter Seven the institutional practices enacted within the Year Three Learning Complex were analysed through a personal lens, finding that an individual's meaningful learning leading to development was determined as an outcome of the implementation strategies developed within the institutional practices. Chapter Eight used the same analysis approach within the Year Prep and Year 5 & 6 complexes and described how consistent the practices were across the school. In addition, the alignment of practices across the school also revealed the differing social situations of development of the participants and in turn the varying motives of the children to engage in the institutional practices.

This chapter sets out the key findings that emerged through the case study, in which I as the researcher engaged in practice developing research. My active participation in the research site supported a deep understanding of the practices in place, enabling extensive examination of

the data collated over the year interpretation of the findings in light of the literature and theory reviewed (Hedegaard & Chaiklin, 2005). The key practices within the institution were examined by responding to the research questions, using the theoretical perspectives outlined in Chapter Two. These practices were aligned with new *theories of learning (concepts)* and also identified is the *interplay of these theorised concepts.*

The main research questions for this case study were:

What underpinning theoretical beliefs and pedagogical practices are in play in a contextual, participative, community model of pedagogical reform, enacted in a government primary school in Victoria, Australia?

What are the dialectical relations between theoretical beliefs and pedagogical practices enacted in one government school undertaking educational reform?

How are children, parents and teachers being 'transformed through participation' at the school?

Sub questions investigated were:

How does the interplay between children's scientific and everyday concepts occur as a result of the beliefs and practice as presented in the school's philosophy?

In what ways did the projects selected for investigation create a double move?

How are the school's principles of negotiated curriculum and collaborative program planning related to the social situation of development?

What is the relationship between the participation structure and motive development?

These research questions aimed to determine and analyse the complex conceptual ideas, which were in play within the institutional practices operating in the school. As the opening quote to this chapter by Vygotsky stated, it is the interaction of these conceptual ideas, which produces the impact of the approach on learning and development of the participants and the culture itself. The pedagogical reform had been enacted within the school, responding to the need for deeper engagement of students (Dalton & Boyd, 1993) with their learning and in response to the research in the mid-nineties regarding the need to revolutionise schooling (Papert, 1994) in reaction to the rapid changes happening within the world through the influence of technological advancement and the impact this would have on the future needs of children being educated today. This journey was outlined in Chapter Five.

This chapter draws upon the literature and the previous data chapters to present key findings that have emerged from the research responding to the main research questions. The chapter is long and complex, beginning with outlining the key practices identified, the beliefs that underpinned these practices determined through the interview process, and the findings in regard to the theoretical concepts enacted within these practices. The findings of the research can be conceptualised in a model, termed 'Wholistic and Transformational Model for Learning and Development of Participants and Culture in an Educational Institution' (see Section 9.5, Figure 9.8). A diagrammatic representation has been used to theorise the complex ways the interrelated concepts resonate with the findings. The complexity of the school is difficult to represent in a model. The model has three dimensions, however, it is dialectic, in that one dimension does not exist without the other, just as a child is not viewed in isolation without a parent nor a student without a teacher. This model needs to be interpreted as a dialectical model; each dimension works only in relation to other/s. This chapter explains each of the dimensions of the 'Wholistic and Transformational Model for Learning and

Development of Participants and Culture in an Educational Institution' model. These dimensions will be discussed in sequence, as the only way to write about the model is to describe each dimension in sequence. Nevertheless, the reader needs to keep in mind the relational context of the elements being described. This model represents my research, which shows the central concepts, dimensions and conditions for pedagogical reform in a school seeking a wholistic, transformational approach to optimising students' learning and development.

The next section discusses the first dimension, describing the essential interpersonal relations between the participants at the school. The second dimension describes the institutional elements of organisation structures, which leads to the formation of transformational learning. Finally the third dimension examines the elements in play leading to the movement from transformational learning to the development of the individual and the culture. The reader needs to continually keep in mind that each dimension is a dialectic, which cannot work without the other/s.

9.2 Interactions

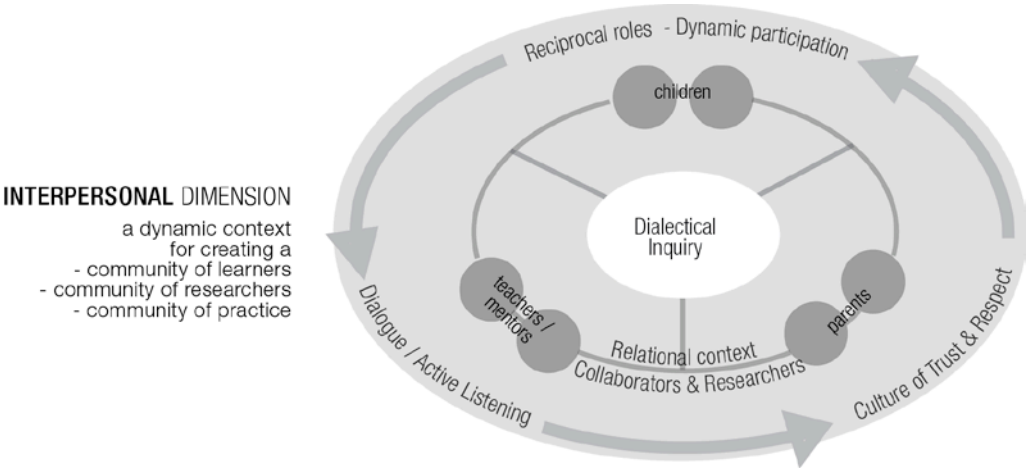

Figure 9.1. Model Dimension 1

The critical dimension of the model concerns the interactions of the participants. The model here (Figure 9.1) represents the identified interactions within the institution. The first level of the model shows the ideal interactions between the participants at the school who are the teachers, mentors, children and parents; this is represented in the inner circle of the model. The inner circle highlights the continuous interactions of the participants, children, teachers, mentors and parents, involving interactions between groups and within groups of participants. The interactions happened through multiple forms of collaborative participation (see Table 6.1). In this ideal model the identified interactions relate to the process of **collaboration;** the research recognised the need for a collaborative enterprise. Also all participants have to feel as though they are **researchers** – children as researchers, parents as researchers, teachers as researchers and mentors as researchers. The connected inner circle represents this relational context between and among the participants and the ideal interactions in this relational context between the participants as those of collaborator and researcher.

The conditions that enable this ideal relational context to emerge are described in the outer circle. The findings demonstrated that the key elements, which enabled this collaboration and co-research, were a **culture of trust and respect**, **dynamic participation** involving **reciprocal roles**, and the enactment of ongoing **dialogue**, which involved **active listening** by all participants.

The outer ring identifies these central conditions which enabled the relational context of participants in the study as collaborators and researchers, and which are termed in the model *culture of trust and respect*, *reciprocal roles/ dynamic participation*, and *dialogue/active listening*. Each of these is discussed in detail in relation to the literature.

9.2.1 Culture of trust and respect.

The teachers and parents described the relationships between the participants within the institution as being based on the values of trust and respect (see Chapters 6 & 8).

The findings give evidence that the presence of the values of trust and respect was enabled through four central conceptual ideas: *pereizhivanie, conceptual and contextual intersubjectivity, subject positioning* and *funds of knowledge,* which are discussed in turn.

It was found that *pereizhivanie* (Vygotsky, 1994)*,* the unity of affect and intellect, was present as a result of the process of a community living the values of trust and respect. This was achieved through the school's practices of valuing the participants in their learning endeavours, which helped learners develop an emotional connection to the content selected as a result of its relevance to their everyday lives. *Pereizhivanie* characterises a unity between the child and their engagement with their social and material world, as such, seeing an emotional experience as always related to something outside of oneself. What is evidenced in this study is that cognitive and emotional development cannot be separated (see Chapters 7 & 8) and are achieved via a trusting, respectful, engaging social environment. **It is thus concluded that an emotional dimension of how the children engage with their social and material world, and its relationship to cognitive development, determine and are determined by the kinds of relationships they have within that context.**

The enactment of the value of respect enabled and provoked conceptual and contextual intersubjectivity through the learning program (Fleer, 2010) with the teachers enacting a mediating role in their planning of a relevant meaningful program.

As was discussed in Chapter Two, conceptual and contextual intersubjectivity is based on the awareness of the teachers of the concepts to be developed, however respecting the need for children to feel the connection to these concepts through relevant contextual situations of investigation.

The positioning of the student and teacher in reciprocal roles enabled above, below and beside positions (Kravtsova, 2008) to be enacted, and this, too, was as a result of the values of respect and trust, where the roles the children can play such as a collaborator, and leader as well as a learner were valued. This concept is further discussed later in the section entitled Participation Structures.

Finally, valuing the funds of knowledge (Vélez- Ibáňez & Greenberg, 1992) of the participants in the development of inquiry research projects reflected the values of trust and respect as they gained knowledge of the children, their perceptions of the world and an understanding of the community context in which the children live. The challenge achieved here was to know the 'whole child' through the lenses of the multiple domains in which the child engages.

A review of literature supports the premises of the importance of trust and respect within relationships in an educational institution. Osborne (2011) noted that trust and respect are the basis of teacher student relationships. MET schools state the three key aspects of their program are Rigor, Relevance and Relationships (Washor, 2003). The Discovery NZ, which was located on the third floor of a department building in the city's central business district, broadened the children's learning contexts by enabling them to draw on the resources within the city, after having earned a trust licence, and through the children selecting their own teacher, demonstrating the importance of trust and respect in the program (Boyask et al., 2008).

It is concluded that the existence of *pereizhivanie* is enabled through the presence of the values of trust and respect, as the participants feel self-assured within the context of the school, enabling a unity of affect and intellect to manifest. This concept can be enacted through the processes of reciprocal roles, conceptual and contextual intersubjectivity and valuing the funds of knowledge of the participants, which together form a basis for the *co creation* of learning possibilities within the institution and ongoing development of the cultural historical context, creating its own funds of knowledge.

9.2.1.1 Dynamic participation.

It was found that the central condition of *dynamic participation* of the members within the 'community of learners' required the key element of collaboration between the varying groups of participants and within the groups of teachers, children and parents. This took the form of collaborative teaching, collaborative learning by the children and collaborative partnerships between, children, teachers and parents. Each aspect of collaboration is discussed in turn.

A key aspect of the dynamic participation practice within the institution was found to be the ongoing collaboration of the teachers. The beliefs which underpinned these practices were found to be the conviction that collaborative teacher planning and collaborative implementation of the programs would benefit student learning. The analysis of these findings found evidence that the teachers working in *collaborative teaching teams* involved reflecting continually on their mediating role (Siraj-Blatchford 2009) of linking children's everyday lives with the development of new scientific understandings. This focus led to developing and enacting conceptual and contextual intersubjectivity (Fleer 2010), through linking the children's conceptual development with the context in which they were living. **It is concluded that teachers working in *collaborative teaching* teams and taking the 'mediating role'**

(Siraj Blatchford, 2009) of enacting 'conceptual and contextual intersubjectivity' (Fleer, 2010) can enable the development of social learning conditions, which can in turn result in 'obshchenie' (Kravstova, 2008a) where the relationship between learning and development is foregrounded.

Another collaborative practice within the institution was found to be the emphasis placed upon the interactions of the children with the institutional practices (Table 7.1). The beliefs underpinning these practices were found to be the value of collaborative learning enacted through conversations/dialogue for varying purposes. The findings show evidence of children engaging naturally with activities that required collaboration with their peers in activity settings. **It is concluded that *collaborative learning situations* can enable *dynamic participation* that can be conceptualised in the model as a child's social motive.** This concept is examined in dimension three of the model.

Another participation practice within the institution was the collaborative interactions between the teachers, parents and children (Table 7.1). The beliefs underpinning these practices concerned the importance of communication strategies between the three groups of participants and the development of three way partnerships in the development of the learning process. The findings show evidence that interactions within the relationships were based around an inquiry involving investigating and discussing opinion around content and concepts, which led to the development of a *shared inquiry approach* through the conceptual process of *Dialectical Logic*. The inquiry process involved active listening and debate throughout the inquiry process, and a responsiveness to new developments and possibilities within the practice.

A literature review found that in the OC (Open Classroom) school, a community of learners consisting of parents, teachers and children built relationships through common endeavours, adapting to new needs and ideas, leading to the development of new cultural practices (Rogoff et al., 2001). At the Discovery 1 School NZ, the focus of the school is to negotiate learning goals through a partnership between parents, advisor (teacher) and child (Boyask et al., 2008), valuing the collaboration of each participant in the process of developing the practice of the community**. It is concluded that *dynamic participation* based on collaboration, can provoke a 'community of practice' (Lave & Wenger, 1991), enabling *co-creation* of the learning experiences through a *dialectical Inquiry* approach.**

9.2.1.2 Reciprocal roles.

The findings show that teachers and children take varying roles within the institution, and that these roles were reciprocal, including the roles of researcher, collaborator, learner, teacher and provoker. The teacher can take a position alongside the child as a collaborator, below the child as an observer and participant in the learning experience and above the child as a mentor and provoker of learning. An analysis of the literature (see Chapter 3) noted that practices within the Golden Keys Schools involved teachers working together collaboratively with a group of children with one teacher taking an above position and another a below position, often role playing a character who had questions that needed answering, such as a wolf who has lost his fairy tale, provoking the learning of the children (Kravtsova, 2008). **The findings in this study showed that the teacher taking varying positions above, beside and below the children also enabled *positioning of the student and teacher in reciprocal, above, below and beside positions*. The child in the below position within a group can take advantage of a mentor, while the child alongside others in a group can enact the role of a collaborator, and taking the above role position in a group means the child can act as an expert.** This

process values the varying perspectives on the learning situation, and the voices and contributions of each participant, provoking meaningful learning, leading to development of the child.

9.2.1.3 Dialogue / Active listening.

Essential in the condition of dialogue and active listening is the concept of dialectical logic, involving discussion and debate through dialogue, both in the development and enactment of practices and the curriculum by all members of the community. Evidence was found that the use of ongoing dialectic conversations connected the learning conceptually with the context of the participants, enabling the children's lives to be at the centre of their learning. This study found that the basis of the inquiry approach involved conversations between and within the groups of participants, including the practices of the mediating role of the teachers, questioning by both teachers and children, the collaboration of the children, and the partnership with the parents. The literature review in Chapter Three also noted this in Hedegaard and Chaiklin's Radical Local Theory (2005), documented project in Harlem, NY of a group of students in after school care researching the history of their local community. The OC school also views all participants of the school as learners, though the priority is the children's learning achieved by building on their interests through collaboration rather than through collaborative inquiry of a predetermined concept (Rogoff et al., 2001). The Discovery 1 School in NZ (Boyask et al., 2008) has a focus on discovery and development of children's interests, leading to negotiating learning goals. All of these practices highlight the importance of active listening to the children in the first instance about their culture and in the second instance about their interests. These are all forms of dialectical logic where active listening is central, mirroring the outcomes of the research reported in this thesis.

It is concluded that *dialectical dialogue*, involving *active listening, collaborative learning contexts and relevant subject matter*, enacted through teacher planning, can provoke 'conceptual and contextual intersubjectivity' (Fleer, 2010), enabling the children to become the subject of their own learning activity (Fleer, 2010).

9.2.1.4 Summary.

Model Level 1 brings together the interrelated core elements of ideal interactions within the institution. This involves creating a relational context of collaborators and researchers through the development of the conditions of a culture of trust and respect, reciprocal roles enabling dynamic participation and dialogue involving active listening. Theorisation of the interactions draws upon a cultural historical view, specifically using dialectical logic to explain it. This context enables development of the institutional structures, which are discussed in the next section. Within the dialectical inquiry process the institutional practices, however, also influence and further develop the interactions of the participants within the institution. Herein lies the complexity of this model in capturing the elements in interplay within an ideal educational institution provoking transformational learning and development. We now move on to examine the second dimension, that of organisational structures within the ideal educational institution.

9.3 Organisational Structures

-A collective creating dynamic experience

The interactions outlined in the first dimension of the model were shown to enable in this school unique forms of participation, based on a relational context of collaboration and co-research through the enactment of the conditions of a culture of trust and respect, dynamic

participation, involving reciprocal roles and dialogue involving active listening. The research evidence shows the teacher child interaction is one of the biggest dimensions for outcomes for children, when those interactions are working well. Siraj Blatchford's (2007) research on shared sustained conversations supports this finding, however this particular study goes beyond just interactions, to identify the conditions that create the interactions and the institutional structures and the organisational dimensions that actually allow these interactions to occur.

Model Dimension 2 (Fig. 9.2) shows how the institutional structures need to be configured for these interactions to occur. Keeping in mind the interaction patterns detailed in Model Dimension 1, the institutional structures that enable the ideal interactions are examined. The structures in this model are based on the premise that teachers have to work with theory, have to understand theoretical concepts and have to do that consciously and deliberately. The structures cannot be based on practices alone, but have to actually encompass a really deep understanding of well-informed theory that is understood and developed in practice. In my model I have tried to capture the key practices and concepts that my research has been significant in identifying, I have named these as part of this theoretical model. This is indeed practice informing theory and theory informing practice. The ideal interactions can only occur when these structures are occurring within the institution, when pedagogical concepts are valued and continue to evolve. They evolve because they are used in practice and practice helps to identify new concepts, creating a dialectic between theory and practice. The active participation of the children, teachers and parents is another organisational structure that is detailed further below.

Together those structures can also be conceptualised, drawing upon theoretical concepts, two of which have been used in cultural historical theory. These very dynamic institutional practices take not an individualistic, but a collective view where people have agency. They are a community of practice (Lave & Wenger, 1991) and a community of learners (Lave & Wenger, 1991; Rogoff, 1990; Wertsch, 1991). A third notion my research has shown needs to be theorized is the concept of *a community of researchers* involving collaborative, contextual, cultural research. This concept is explained later in this section.

The dimensions, identified in the inner ring of the model (Figure 9.2) – pedagogical concepts, participation structures and pedagogical practices – together enable the central concept of transformative learning within the institution. Connecting these constructs in the inner circle are the concepts of co-created curriculum, negotiated learning and transformation through participation. Next is a detailed explanation of each of these dimensions and constructs.

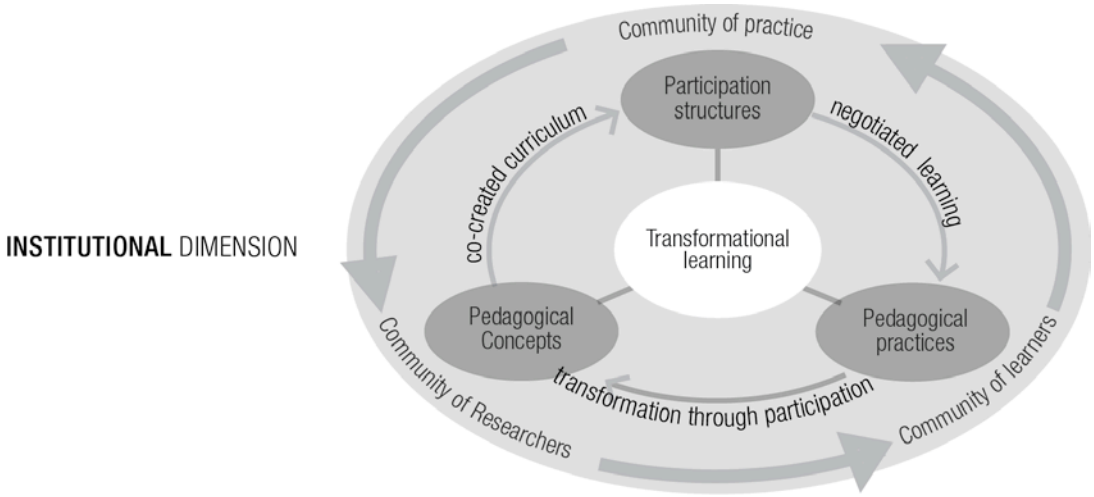

Figure 9.2. Model Dimension 2

9.3.1 Participation structures.

It was shown in Chapters 8 and 9 that important *participation structures* within the institution were: communication strategies, the varying positioning of participants, the mediating role of the teacher, and imitation. These structures support the key participation concept of *co-creating the curriculum*, a concept that exists through the interactions between participation structures and pedagogical concepts, shown in the inner circle of the model. The participation structures and aligned pedagogical practices enable the concept of *negotiation of learning* indicated in the inner circle of the model. The analysis of the *participation structures* and the concepts of *co-created curriculum* and *negotiated learning* are examined elaborating upon and theorising further the interactions of the participants shown in the first dimension of this model.

9.3.1.1 Communication – provoking a dialectic.

A key practice within the institution of schooling in this study was found to be the communication strategies (Rogoff, 2003) implemented in the school. The belief that underpinned these practices of communication between the children, teachers and families was the need and desire for open communication to provoke dialectical thinking by the participants about the practices and learning within the institution.

Evidence has shown that open communication based on dialectical discussion of ideas and opinions enabled *co-creation* of the curriculum. This was enacted through teacher planning using contextual and conceptual inter subjectivity as suggested by Fleer (2010), based on the hypothesis of children's intellectual participation in the content and concepts under investigation, which were continually open to new interpretations and refinement. This process valued the student voice, which in turn provoked dynamic participation.

It is concluded that ongoing dialectical discussions of ideas and opinions between all participants enable co-creation of the curriculum, valuing and provoking the participation of each of the participants. Dialectic communication where children have agency, builds upon the existing models discussed in the literature for specific inquiry-based schools such as the MET Schools in the USA (Washor, 2003), Reggio Collaborative schools, St Louis, USA (Cadwell, 1997), Discovery 1 School in NZ (Boyask et al., 2008), Open Classroom school in Salt Lake City, USA (Rogoff et al., 2001) and The Developmental Education schools in the Netherlands (van Oers, 2012a).

9.3.1.2 Positioning.

Through an institutional lens of analysis a key practice within the institution was found to be the development of non-traditional roles for the participants, further developing the concept of reciprocal roles outlined in the last section. The beliefs that underpinned these practices included valuing the varying positions of the child above, below and beside the teacher (Kravtsova, 2008a). These beliefs are reflected in the new organisation structure developed, which enabled these non-traditional positions to be enacted.

In the Golden Keys Schools (Kravtsova, 2008a) in Russia teachers took varying positions above, below and beside the child; in this case study context both teacher and child were able to take these varying positions in relation to each other. As discussed in Chapter Two, Bozhovich (2009) outlines two conditions which determine the child's position within a social cultural environment: firstly the demands developed historically that are placed on children of a particular age and secondly, the demands people around the children place on the individual, aligned to developmental attributes of a particular child. This study has found that when these historically developed demands are questioned, the demands and opportunities that

the people around the children develop and implement, provoke new positioning of the children, leading to the achievement of understandings and new skills through taking on non-traditional positions, enabling roles such as collaborators, innovators, researchers and leaders. The social situation of development (Vygotsky 1998) described as the unique relation between the child and the demands of the social context, provides the catalyst for new psychological development and a new orientation to engage in the social context, as the result of the challenges to the children within these new positions and their inherent roles.

The findings in the last section demonstrated that teachers and children can take varying roles within the institution, and that these roles are reciprocal, including the roles of researcher, collaborator, learner, teacher and provoker. **The teacher can take a position alongside the child as a collaborator, below the child as an observer and participant in the learning experience and above the child as a mentor and provoker of learning. It is concluded that when the positioning of the student and teacher is interchangeable, enabling above, below and beside positions, varying perspectives on the learning can be held by the teacher and the interactions with the learning situation by the student can vary, provoking meaningful learning leading to new psychological development.**

9.3.1.3 Imitation.

Vygotsky's psychological use of the term imitation (1997a, p. 95) refers to noticing a particular activity within a social context and being able to replicate that activity with some conscious awareness. The findings show that throughout the research process expert knowledge was sought to provide both teachers and children with processes and understandings for which imitation provided the opportunity for learning. These mentoring learning opportunities for both children and teachers included members of the community,

either parents, children or teachers, or listening to and observing experts from the community. They occurred via collaborations or mediums such as films, written material, songs, art work or excursions, which, when in meaningful contexts provoked the conditions for obshchenie. The concept of *obshchenie* as discussed in Chapter Three, is the dialectical conception of development and learning. Kravtsova and Berezhkovskaya stress two fundamental criteria for the process of *obshchenie:* a common context and the coexistence within this context of two points of view, between which dialogue is possible (Grimmitt, 2012, p.34). **The findings show that the process of imitation by both the teachers and children within the case study context, provided opportunities for both to replicate an activity with some conscious awareness and dialogue with the mentor, provoking *obshchenie.***

Several of the schools in the literature review used experts to enable the children's learning and to provoke development: this occurred in MET Schools (Washor, 2003), through the students working with experts in the field; Discovery 1 School (Boyask et al., 2008) through the going out in to the city to engage with experts; and the OC school (Rogoff, Turkanis & Bartlett, 2001) through parents with expertise.

It is concluded that through interactions provoking possibilities for imitation by the sharing of expert knowledge or a skill, in a meaningful context for the learner, a point of challenge for the learner can be provoked within their current system of concepts or skill level, providing a meaningful context for provoking learning and development.

9.3.1.4 Mediating role of the teacher.

As would be expected in a study of a school the role of the teacher in mediating learning was central. Consistent with previous research, the study found that key to learning were the 'shared sustained conversations' with children (Siraj- Blatchford, 2009). Fleer's (2010)

concept of the 'conceptual and contextual intersubjectivity between the child and the teacher', was enacted in this context. Teacher planning was found to be a process of understanding the relations between the mediating role of the teacher and the child's lived social world. This was also the process noted by Fleer of conceptualising development, learning and pedagogy together. In a cultural historical view of learning and development, the role of the teacher is critical for supporting concept formation. "But the role the adult takes is not about matching materials and activities to the children's current developmental level; rather it is to conceptually engage the children in activities well beyond what they could think about on their own" (Fleer, 2010, p. 45). Conceptual and contextual intersubjectivity were enacted in this study based on the awareness of the teacher of the concepts to be developed by the children, as well as the teacher's efforts at enabling connection to these concepts by the children through relevant contextual situations of investigation. **The findings show that the 'mediating role' (Siraj Blatchford, 2009) of the teacher connected the concepts to be learnt to the child's social and cultural lives, which enabled 'conceptual and contextual intersubjectivity' (Fleer, 2010) to occur, challenging the children's conceptual understandings and fostering opportunities for '*obshchenie*' (Kravtsova, 2008a).**

9.3.1.5 Co-creation of curriculum.

Co-creation of the curriculum is a concept identified as enacted through the relationship between the participation structures and the pedagogical concepts that are examined in the next section. **The study found that the enactment of the reciprocal roles of researcher, learner and mentor through the processes of positioning and imitation, *enabled co-creation of the curriculum*, through ongoing reflection (Dewey 1933, 1938, Osterman & Kottkamp, 2004) on the discussions and experiences provided, which informed future planning.**

The OC school (Rogoff, Turkanis & Bartlett, 2001), the Developmental Education schools in the Netherlands (van der Veen & Pompert, 2011; van Oers, Janssen-Voss, Pompert, & Schiferli, 2003) and the Golden Keys Schools in Russia (Kravtsov, 2010) as noted in the literature review (see, Chapter 3), are all schools using cultural- historical theory as a framework for their educational programs. Each school system emphasises the alignment of participation processes for students and teachers in their approaches. The Developmental Education school participation structures are described by Van Oers et al. (2003) as *collaboration with innovators* aligned here to the concept of working with experts, *collaboration with pupils to assist students to gain proficiency in cultural activities* (in this research context for authentic meaningful purposes) and *collaboration with other teachers*.

In Chapters 7 and 9 it was shown that *co-creation of the curriculum* within the school context enables *dynamic participation* of the children in the planning and implementation of the program. The ability of children to negotiate their learning is the result of a combination of both of these processes, *co-creation of the curriculum* and *dynamic participation* of the children in the program, which are made possible through valuing the importance of the child having an active voice in their learning and taking into account in planning the previous experiences of the children and their social situation of development.

9.3.1.6 Negotiated learning.

Negotiated learning is enacted through the relationship between the participation structures and the pedagogical practices that are examined in a later section. When co-creation of the curriculum is enacted within the culture of a community of learners based on a culture of trust and respect, dialogue and reciprocal roles, the students are able to negotiate their own learning as a true enactment of student voice. This process is also used within the Discovery 1 School

(Boyask, McPhail, Kaur & O'Connell, 2008) and the MET schools (Washor, 2003) through the teacher's role as facilitator. In the case study school, the home teacher enacted this role conferencing teacher, meeting with the student or small group of students to discuss learning possibilities, which led to the development of a negotiated learning plan for a personal inquiry project. A proforma was developed and used to develop and track the implementation of the personalised inquiry project. The literature review (see Chapter 3) on 'inquiry based learning' found varied interpretations of this term. The personalised 'inquiry project' is consistent with the 'archaeological approach' (Crick, 2009) and 'possibility thinking' (Craft 2000) with a focus on the formation of identity, dispositional values and attitudes of a competent learner. The personalised inquiry approach differed from that of the community collaborative inquiry approach outlined in Chapters 6 to 8. It happened alongside these community projects and enabled more personalisation and freedom in its development and enactment. It was identified that the children initiated these personalised inquiry projects based on an area of interest or a research question, and mentors supported the children in their implementation of their plans supporting each project's development and enactment. There were opportunities to see what the children could do independently, what skills and understandings could subsequently be consciously used within a new learning context.

9.3.1.7 Summary.

The findings in relation to the participation structures within the institution come together in Figure 9.3. The participation structures of reciprocal positioning, imitation, dialectic communication strategies, and the mediating role of the teachers help enable co-creation of the curriculum. These processes in turn contribute to dynamic participation through negotiation of learning experiences, within the developed culture of a community of learners, developing a

community of practice, and a *community of researchers* engaged in collaborative contextual cultural research, altogether contributing to the transformational learning of the participants.

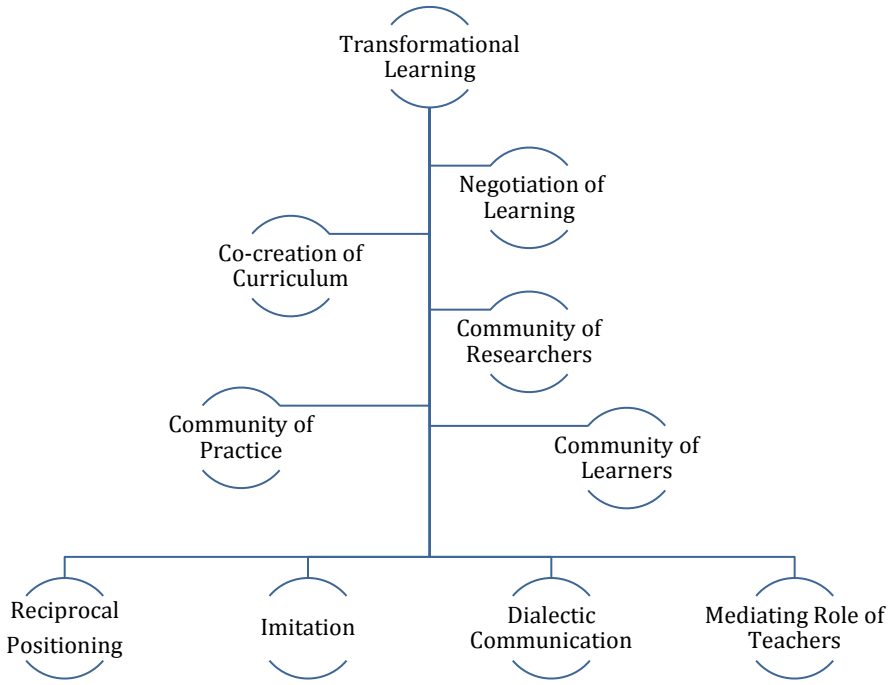

Figure 9.3. A summary of participation structures

9.3.2 Pedagogical concepts.

It was found that cultural historical theoretical concepts of learning and development were congruent with the beliefs that underpinned the pedagogical practices within the institution investigated in this study. The key theoretical concepts aligned to the pedagogical approaches are outlined in Figure 9.4. They include the processes of interpsychological functioning and intrapsychological functioning, the varying knowledge constructs of narrative, empirical and theoretical knowledge, and consciousness of thought including the mental constructions of learning to learn. Each of these is discussed in this section and further elaborated on in the third level of the model in relation to motives, development and children's developmental transformation. These concepts were not initially consciously considered by the participants in

the institution. Part of the process of my role as researcher involved in practice developing research (Chaiklin, 2006) was to make explicit the connection between practice and theory, introducing the teachers to the concepts of learning and development from cultural historical theory. My research has made explicit the concepts in play from the perspective of cultural historical theory, uncovering the essence of the practice.

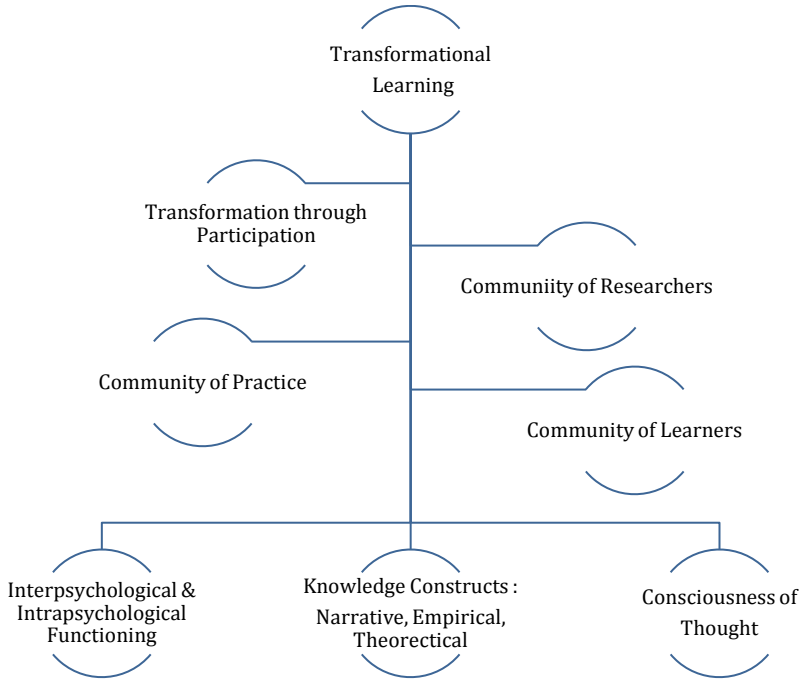

Figure 9.4. A summary of the theoretical pedagogical concepts

9.3.2.1 Interpsychological functioning and intrapsychological functioning.

Interpsychological functioning (Vygotsky, 1978) is a process provoked by participation in experiences within collaborative dialectic contexts, in that current perceptions of concepts are challenged. This context can simultaneously provoke intrapsychological functioning where

current conceptual constructs are re-configured within the individual's mental system of concept due to the interpsychological functioning experiences.

In Chapters 7 and 9 the findings show that the provision of co-created, purposeful, collaborative experiences for the children, based on meaningful research, enables the development of interpsychological functioning, where beliefs and theories are challenged and questioned leading to the possibilities of new intrapsychological functioning, the re-configuring of conceptual understandings, leading to development. This process is consistent with the 'community of learning' approaches use in the schools, theorised using cultural historical theory: the OC school (Rogoff, Turkanis & Bartlett, 2001), the Developmental Education schools in the Netherlands (van Oers 2012a; van Oers 2012b; van Oers, Janssen-Voss, Pompert, & Schiferli, 2003) and the Golden Keys Schools in Russia (Kravtsov, 2010). It also reflects 'The Radical Local' teaching and learning approach (Hedegaard & Chaiklin, 2005), where intent collaboration in meaningful encounters between the participants is a focus, leading to learning and possible development. **It is concluded that co-created, purposeful sources of learning can provoke the interplay of interpsychological and intrapsychological functioning.**

9.3.2.2 Narrative, empirical and theoretical knowledge.

Chapters 7 and 9 demonstrate that the development of each of the inquiries from a narrative and empirical knowledge level to theoretical analysis of the concepts under investigation, provided opportunities to develop new conceptual understandings. This occurred as the child identified a crisis in their current conceptual network of ideas, prompting a new configuration of their conceptual structure. These new conceptual understandings, now embedded within the child's psychological system of concepts, enabled the volitional use of these conscious

concepts to support engagement with their everyday lives as well as adding to their formalised development of knowledge (concepts in this case study such as those regarding relationships, design, sustainability). Both forms of knowledge, theoretical and everyday knowledge, support the development of the other and at the same time the child is developing the skills of learning to learn. Hedegaard and Chaiklin (2005) describe the concept of the interaction of everyday and theoretical (scientific) knowledge as a 'double move' within their 'Radical Local Learning and Teaching' approach. The goal of this approach as discussed in the literature review is "to create learning tasks that can integrate local knowledge with core conceptual relations of a subject matter area so that the person can acquire theoretical knowledge that can be used in the person's local practice" (p. 69).

The study found that the ongoing development of theoretical knowledge through collaborative inquiries, enacted in meaningful contexts enabled a double move (Hedegaard & Chaiklin, 2005) between everyday and scientific knowledge as well as a *mental construct of learning to learn*.

9.3.2.3 Consciousness of thought.

Consciousness of thought (Vygotsky, 1987a) requires the presence of a system, a context of interrelated concepts, in which conscious awareness and voluntary use of a concept is possible.

The findings in this study outlined in Chapters 7, 8 & 9 provide supporting evidence that the institutional practices fostered reflection by the participants on the pedagogical practices and the findings of the inquiry projects. Through this process, new conceptual understandings and skills were developed. From a theoretical perspective this reflection enabled consciousness of thought on process and new conceptual understandings, and the alignment of these processes

and concepts with a purpose for their volitional use. This process was true for both children and teachers in this study. This finding is consistent with Grimmett's (2012) finding that, "Professional development requires teachers to develop conscious awareness of unified concepts of teaching/learning, children's development and/or subject matter" (p 272).

Elements of cultural historical theory include valuing an understanding of the cultural historical context and the transformation of that culture through intent participation (Rogoff, 2003). In this context consciousness of thought by all participants in the inquiry process and an evolving *mental construct of learning to learn* were the intended outcomes of the collaboration. Learning to learn involves a conscious awareness of varying processes and strategies that can be used to learn new knowledge and skills, as well as an understanding that an individual's perceptions are based on prior experiences and interactions with cultural contexts.

The finding here is that *the alignment of the institutional pedagogical practices with the theoretical developmental concept of consciousness of thought*, enabled reflection on the purpose of practices, a key element of learning to learn, in turn enabling the transformation of the participants and the culture (Rogoff, 1990, 2003; Wave & Wenger, 1991). **It is concluded that using cultural–historical theory as a prism through which practice is analysed enables practices to be consciously considered.**

9.3.2.4 Transformation through participation.

Transformation through participation was enacted through the interactions between the pedagogical concepts outlined above and the pedagogical practices, which are outlined in the next section. The findings also respond to the related sub-question of the main research

question: ***In what ways are children, parents and teachers being 'transformed through participation' at the school?***

Transformative learning occurred, impacting concurrently on the children, teachers and parents as a result of their collaborative participation as a community of learners enacting a community of practice through engagement as a *community of researchers*. The beliefs about education were shared by all members of the community and evidenced in the pedagogical practices of the institution as reported in the documentation of learning presenting the voices of the children, the teachers, and parents; the consistency of beliefs among all of these participants support this claim. The beliefs enacted by the members of the community have been theorised in this research, thus enabling the conceptualisation of 'transformation through participation' as the relationship between pedagogical concepts and pedagogical practice. The research activity in the community unpacked the dialectical relationship between theory and practice.

It is concluded that community 'transformation through participation' can be enacted when the shared beliefs are realised, theorised, enacted and made visible to the community. It was found that the community engaged in ongoing inquiry through various forms of dialogue, enacting shared motives to create meaningful, relevant learning opportunities for the children. The professional interactions and the professional learning of the teachers led the process.

9.3.2.5 Summary.

The key theoretical concepts, aligned with the pedagogical approaches, outlined in Figure 9.3 and discussed in this section, comprised: the processes of interpsychological functioning and intrapsychological functioning, the varying knowledge constructs of narrative, empirical and

theoretical knowledge, and consciousness of thought including mental constructions of learning to learn. These constructs supported the development of a community of learners, a community of practice and a *community of researchers,* enabling the transformation of the participants and the culture within the institution and, simultaneously, the participants' everyday lives and the communities with which the institution engages.

9.3.3 Pedagogical practices.

The pedagogical practices were developed within the institution by the community of learners, as part of the process of community research engaging in contextual cultural research. The findings show that the main pedagogical practices were inquiries, leading activities, infrastructure, including timetabling and physical environments, learning expressed through various mediums, making learning visible through documentation, and assessment. Each of these practices is discussed in this section.

9.3.3.1 Inquiry.

A key practice within the institution was found to be the emphasis on inquiry research projects (see also Lonka et al., 2000); the approach links the development of the key conceptual understandings of learning within meaning contexts, and is the concept of problem based learning (Barell, 2006; Gillies et al., 2012; Hmelo-Silver et al., 2007; Panasan & Nuangchalerm 2010). This approach enacts Vygotsky's explanation of conceptual development as a single process of self-development, where one stitch (concept) in the fabric (conceptual system) can only ever be understood within the context of the whole tapestry, which represents the child's life.

The belief which underpinned the approach in the case study school is that the process of collaborative inquiry enacts the theoretical concept of interpsychological and intra-psychological functioning. The findings provide supporting evidence that the collaborative inquiry was built upon the children's narrative knowledge, with their stories leading to further development of their empirical knowledge developed through observations and experiences. Through deeper questioning (Dodge, 1991; Lonka et al., 2000; Neuman 2012; Scardamalia & Bereiter, 1993) and analytical analysis (Crick 2009; Erickson, 2007), theoretical knowledge could be developed and was documented as findings of the research process, and in turn, because of the conceptual and contextual relevance, influenced learners' everyday lives. The theorisation of this approach moved the concept from collaborative inquiry to collective inquiry provoking a dialectical process. Inquiry based learning was found in several of the schools outlined in the literature review: the Developmental Schools, Netherlands (van Oers, 2012a), Discovery School, NZ (Boyask et al., 2008), and the Reggio Collaborative schools in St Louis USA (Cadwell, 1997). Chaiklin & Hedegaard (2005) in their 'Radical Local teaching and learning approach' described their focus on "relating general academic concepts in relation to local, everyday situations", arguing that this "gives better conditions for trying to realize the idea of making academic concepts into rich, active concepts that are used by children in their thinking and acting" (p.42). The review of the literature on a "community of inquiry" (see Chapter 3) indicates that the approach in this case study also concerns the development of a community of learners from a cultural historical perspective of learning and development (Lave & Wenger, 1991; Matusov & Rogoff, 2002; Rogoff 1990). **It is concluded that *collective inquiry* can enable the development of theoretical knowledge through dialectical dialogue and the co-creation of collaborative learning experiences. Theoretical knowledge builds on children's narrative and empirical knowledge,**

supporting the development of new perspectives on currently held concepts within the child's psychological system of concepts. The outcome of *collective inquiry* is the active use of new conceptual understandings within the child's thinking and acting.

The teaching and learning methods used based on an inquiry research process (Table 7.2) were an important practice within the inquiry approach. The belief underpinning these practices of teaching and learning was the understanding that the methods are embedded in the organisational structures, and all decisions about implementation of the curriculum are a reflection of these methods. Key elements within this approach were found to be the use of questioning, dialogue, and provocations (leading activities) (see Chapter 8). This process is also reflected in the OC school (Rogoff et al., 2001), the Developmental Education schools in the Netherlands (van der Veen & Pompert, 2011; van Oers et al., 2003) and the Golden Keys Schools in Russia (Kravtsov, 2010), where new methods of teaching and learning have been developed based on cultural historical theory and are consistently implemented within the institution. The findings show evidence that the shared experiences enabled through collaborative research using purposeful, varying sources of learning (Table 7.1), engaged the participants in the higher order thinking strategies of ongoing collaborative reflection and analysis. **It is concluded that co-created, shared experiences within the collaborative inquiry process can provide a means for shared reflection and analysis, which in turn develop the cultural practices of the community.**

9.3.3.2 Leading activities.

As noted in Chapter 8 the concept of leading activity originated in Vygotsky's (1966) writing on play. Davydov (2008) elaborated on this research in relation to learning as a leading activity. Kravstova argues (Fleer, 2010, p.169) that a "child's transition from one

psychological stage to another is marked by a change in leading activity." Fleer (2010) stated "the leading activity refers to the visible activity or behaviours of an individual in the social world and to the psychological criteria for participation in these activities, particularly the motives that are generated through this dialectical process" (p. 169). Fleer contends that while "psychological criteria for engagement in the social and material world can be foregrounded, consideration must also be given to how the activities themselves generate the motives and psychological criteria" (p. 169). The teachers within the institutional practice develop leading activities, which are planned to provoke the children's engagement and to challenge them in a collective situation. The activities are developed taking into account the " 'leading activity' of the child in a given period of development, which is reflected in the child's motives, feelings, values and identity" (Hedegaard, Edwards & Fleer, 2012, p. 4). Nevertheless, the activities provided are not confined to the existing period of development; rather, they create a crisis in conceptual understanding, provoking a change in perception and understanding, leading to a new period of development. Later in this chapter an account is given of the analysis of how the motives of the children in this study to engage in the leading activities were aligned with their central psychological period, taking into account their social situation of development.

9.3.3.3 Infrastructure.

As was shown in Chapter Four, the infrastructure of the institution was guided by key principles that ensure purpose is a central tenet. Flexibility of the infrastructure was allowed only to ensure the key principles were responded to, as appropriate for the social situation of development of the participants. Two key elements of the infrastructure were the organisational aspects of timetabling and the design of the physical environment.

Timetabling

The findings show that timetabling was flexible. The schedule was constructed weekly in accordance with the learning requirements of the learning community. Theorisation of the timetabling approach found that it consisted of organised time for workshops providing shared experiences, leading activities with the aim of capturing links to concepts within the zone of potential development of the participants, targeted teaching where new skills and activities were provided according to identified need within the zone of potential development of the participants, and learning agreement time, where children engaged in purposeful learning enacting new conceptual understandings. These purposeful, collaborative practices developed within the institution were the organisational means to enact the inquiry research, the goal of which was the development of new conceptual understandings by the participants. **It was found that the planning of a flexible timetable enabled the ongoing development of purposeful, collaborative pedagogical practices involving co-creation of a curriculum relevant to the developmental needs of the participants within their social situation.**

Physical Environments – as purposeful mediums for learning

The findings show that the physical environments had been purposefully designed to support the principles of a community practice, through the selection and design of all physical elements to create a welcoming, amiable, purposeful, clarified environment (Featherston, 2007). This process also involved the development of a comfortable, aesthetically pleasing learning environment.

Large areas had been created to allow for communities of learners, enacting collaborative teaching and learning, a variety of groupings of the children and staff and a variety of

experiences simultaneously within the learning complex. Within these large areas specific functional settings were created for particular purposes. These diverse spaces were each designed to promote and support the scope of social and learning experiences essential to rich collective inquiry. These settings were always available to the children, enabling them to move freely from one setting to another throughout the day to allow spontaneous development.

Featherston (2007) conceptualised three layers of the physical environment, the physical building structure, the furniture and fittings and finally loose items such as resources and displays.

The provision for shared facilities and tools for learning was described by the designer Mary Featherston (2005) for the philosophical and pedagogical framework (see also Table 5.1):

- Provision of diverse and rich settings to support a wide range of experiences - each setting to have an appropriate sense of place enclosure and to provide cues as to use.
- Each type of experience requires different facilities (space, boundaries, services, surfaces, storage, acoustics, furniture, learning materials).
- Diverse settings are seamlessly connected.
- Provide discreet settings with appropriate enclosure to avoid visual and aural distraction.
- Some areas are semi permanent (stable) whilst enabling flexibility for temporary change.
- Attractive provision of loose items, which provoke, attract, stimulate, support and engage children's minds and bodies.
- Clear circulation routes.

Reflection of the children in the environment was a priority through 2D, 3D and multi-media displays. The use of the physical environment was linked to the weekly-developed timetable, which reflected the pedagogical planning for the week. Ongoing maintenance, enrichment and evolution of the environment was a priority for the developing community of practice.

This approach contrasted with other predominant approaches to physical design: traditional home group classrooms sometimes with shared break out spaces or large totally open spaces (Fisher, 2005; Nair, 2009)

It is concluded that the provision of purposefully designed physical learning environments can provoke collaborative teaching and learning, a variety of groupings of the children and staff and a variety of experiences simultaneously within the learning complex. Such environments also support the enactment of the pedagogical approaches that enable the interpsychological and intrapsychological development of the children.

9.3.3.4 Learning expressed through various mediums.

A key practice within the institution was the recording of learning through a variety of processes. The study found that the beliefs that underpinned these practices were: making visible the learning journey of the individual and the community; valuing the multitude of ways that learning can be represented and the belief that children develop preferred mediums for expressing themselves. The projects outlined saw learning expressed through film, a variety of visual art mediums, oral presentations and a variety of writing genres. The possibilities for the expression of learning through a variety of mediums were made available through the physical environment design, resourcing and timetabling. This variety of mediums used for expression was also apparent in other institutions reviewed in the literature, for instance, the OC School (Rogoff et al., 2001), The Developmental Education schools in the

Netherlands (van Oers, 2012a), Golden Keys Schools in Russia (Kravtsov, 2010), MET Schools in the USA (Washor, 2003), Discovery 1 School in NZ (Boyask, McPhail, Kaur &. O'Connell, 2008) and the Reggio Collaborative Schools, St Louis, USA (Cadwell, 1997).

The theorisation of opportunities for learning expressed through various mediums shows that the approach supports the interrelated process between interpsychological and intrapsychological functioning, leading to new conceptual perceptions of the world and in turn learning, opening up new possibilities for interaction within their social and cultural context.

9.3.3.5 Making learning visible documentation.

In the findings it was identified that documentation of the learning within the institution took place through a variety of processes: learning journey documents, portfolios, documentation folders and panels. Such documentation provided the evidence for discussion and investigation into the next phases of the learning. The collaborative inquiry process was made visible through documentation folders and the sharing of this documentation through displays. This process facilitated professional and community dialogue. Cadwell (1997) characterises documentation as a communication process within Reggio Emilia pre-schools in Italy, and asserts its influence on the practice within the Reggio Collaborative Schools, St Louis, USA, where teachers' commentary on the purposes of study and the children's learning process, transcriptions of children's verbal language, photographs of their activity, and representations of their thinking in many media are composed in carefully designed panels or books to represent the process of learning in the schools. The documentation serves many purposes. It makes parents aware of their children's experience. It allows teachers to better understand children, to evaluate their own work, and to exchange ideas with other educators. Documentation also shows children that their work is valued. Finally it creates an archive that

traces the history of the school and the pleasure of the process of learning experienced by the children and their teachers. (Gandini, 1993 in Edwards, Gandini, & Forman, 1993, p. 5).

It is concluded that documentation of learning made the learning visible, and enabled a *Dialectic community of inquiry* that incorporated a consciousness of thought, which supported a new level of participation.

9.3.3.6 Embedded assessment.

The findings show evidence that when assessment was embedded in the program, and it was focused on conversations with children in meaningful contexts, then what results genuinely informs the planning and implementation of future learning. **It is concluded that assessment, as an embedded process based upon conferencing conversations and analysis of contextual evidence, is a valid process to inform future learning.** The scope of this research does not allow for an in depth analysis of the assessment practices, though this is discussed in a later section on suggestions for future research.

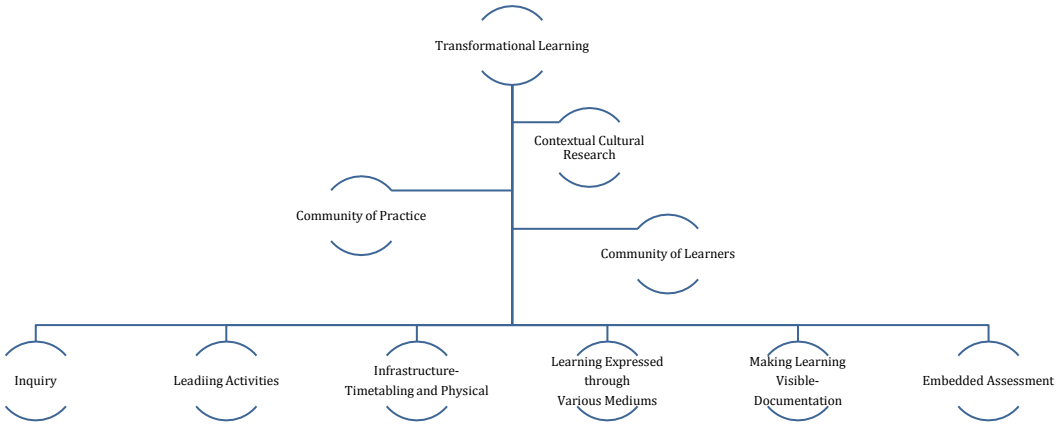

Figure 9.5. Pedagogical practices

9.3.3.7 Summary.

The pedagogical practices are brought together in Figure 9.5. The findings show the main pedagogical practices were: inquiries, infrastructure including timetabling and physical environments, learning expressed through various mediums, making learning visible through documentation, and embedded assessment. These practices were developed within the institution as an integral part of the community of practice, developed by the community of learners, through a community of research. These concepts are identified in the model in the outer ring (Refer to Figure 9.2 Model Dimension 2). They theoretically underpin the organisational structures and in turn enable the further development of the institution and its participants through these processes.

9.3.4 Community of researchers.

The community of learners engaged together to create a community of practice through the process of acting as a *community of researchers*. The process of being a *community of researchers* involved dynamic interactions enabling and being enabled by the organisational structures of the dialectic between pedagogical concepts and pedagogical practice as well as the elements of the participation structures including communication strategies, the varying positioning of participants, the mediating role of the teacher and imitation. As a *community of researchers* the participants continually sought to improve and refine their practice, enhancing the learning and development of all of the participants – children, teachers, parents and mentors. At the same time the life experiences of the participants were enhanced and the culture of the institution was developed.

9.3.5 Conclusion: organisation & implementation.

The findings respond to the main research question: What theoretical beliefs and pedagogical practices underpinning a participative, community model of pedagogical reform were enacted in a government primary school in Australia?

Each of the ideal institutional elements identified in the inner ring: participation structures, pedagogical concepts and pedagogical practices, were created by and contributed to the ideal forms of interaction – those of a community of learners, community of practice and *community of researchers* – all of which combine to enable transformative learning. The relationship among ideal institutional structures – identified as unique to this research and shown in the inner ring of the Model Dimension 2 – can result in ideal dynamic enablers for transformational learning: transformation through participation as a result of the relationship between pedagogical concepts and pedagogical practice; co-created curriculum as a result of the relationship between pedagogical concepts and participation structures; and negotiated learning as a result of the relationship between participation structures and pedagogical practice. These elements are drawn together in the second dimension of the model, Model Dimension 2, which is enabled because of its foundation in Model Dimension 1 portraying the ideal interactions within the institution (Figure 9.6).

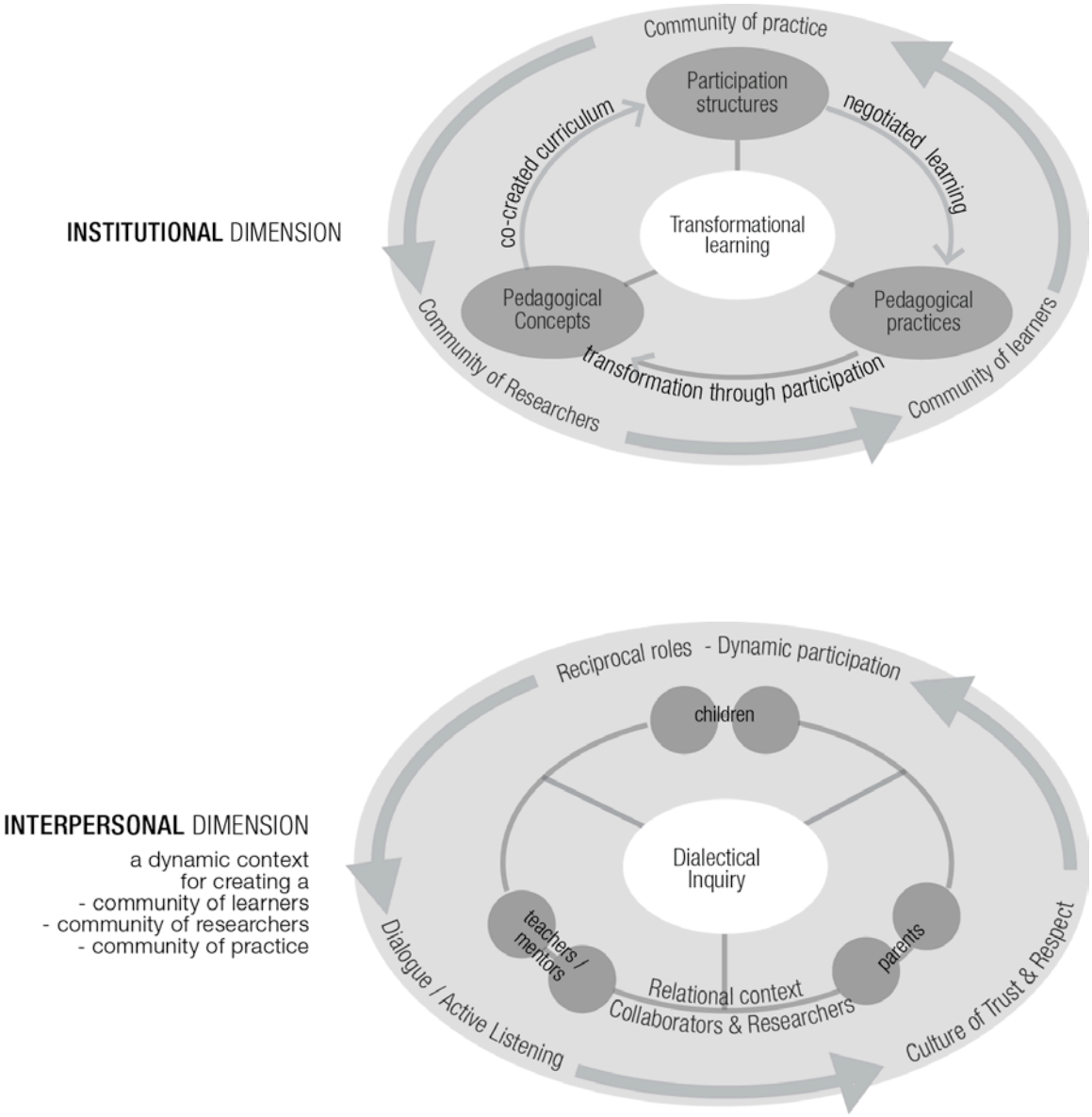

Figure 9.6. Model Dimensions 1 & 2

It is found in this research that the ideal interactions involving a community of learners, enacting a community of practice through a *community of researchers* can lead to the development of ideal institutional structures and enablers, resulting in the enactment of transformative learning. All of these collaborative experiences lead to transformational learning possibilities, yet they do not guarantee the development of the individual and the culture. The third dimension of the model examines the elements in play to ensure such

development is possible. The findings of the research have identified key conceptual understandings of: motives, development and concept development occurring within the context of the cultural historical concepts of the alignment of affect and intellect (*pereizhivanie*) and contextual and conceptual relevance. These elements of the third dimension are examined in the next section.

9.4 Development of the Person and Culture

The complex elements outlined in the previous sections elaborated firstly on the ideal interactions within the institution, and secondly the ideal organisational structures, providing the foundation and possibilities for transformational learning outcomes to occur. This final dimension focuses on new areas of analysis not currently found in the literature. People know that how one feels and thinks is important to learning, however they do not foreground this in any of the learning models. They also fail to think about the relationship between the conceptual and contextual elements of learning.

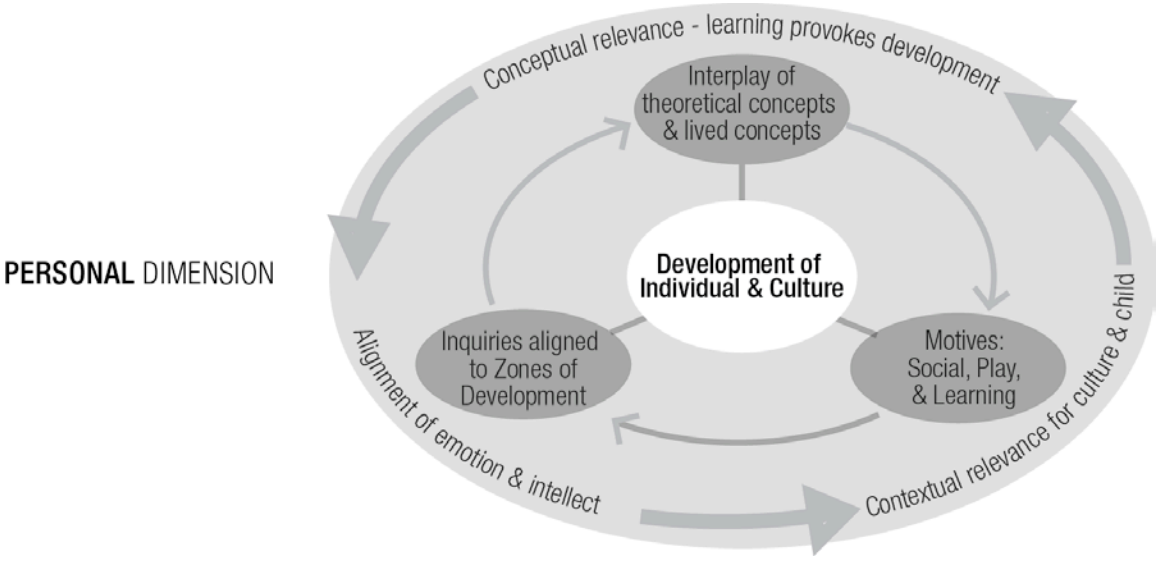

Figure 9.7. Model Dimension 3

The complexity of the discussion of the findings continues in the third dimension of the model. Transformational learning leading to development of the individuals and the culture is identified through the findings in this research as the result of the interplay of experiences arising from the organisational structures and interactions underpinned by cultural historical theoretical ideas, namely, conceptual relevance for the participants, contextual relevance for the child within their culture and the effects of the alignment of emotion and the intellect, *pereizhivanie*. These elements are found in the outer ring of the Model Dimension 3 (Figure 9.7). The findings unpack this culture described in the outer circle elements and identify further key theoretical concepts, which when refracted through the outer ring of theoretical ideas provoke transformational learning leading to development. These further concepts include the interplay of motives, the alignment of the inquiry experiences with zones of development and the interplay of scientific concepts and everyday concepts. Each of these concepts come together in Figure 9.7 Model Dimension 3, and combines with the elements outlined in the levels detailed already to produce experiences which provoke development of the individual and the culture. The examination of each of these processes responds to the sub research questions.

What is the relationship between the participation structure and motive development?

How are the school principles of negotiated curriculum and collaborative program planning related to the social situation of development?

How does the interplay between scientific and everyday concepts occur as a result of the beliefs and practice as presented in the school's philosophy?

In what ways did the projects selected for investigation create a double move?

I will now examine in detail the inner ring of the model, including the concepts of: Motives – social, play and learning; Inquiries aligned to zones of development; and the Dialectic of scientific and everyday concepts.

9.4.1 Motives: social, play and learning.

In response to the research question: *What is the relationship between the participation structure and motive development?* It was found that there was a direct correlation between participation of the children and three interrelated motives *play, social and learning*.

The key practice within the institution was found to be the creation of possibilities to provoke the child's participation with the goal to evoke learning. The beliefs underpinning these practices were found to concern the importance placed upon motivation of the children, and the relevance of content, collaboration, purposeful tasks and experiences. Chapter Eight has shown that valuing children's learning, social and play motives (Table 8.2) enables connection between current and prior experiences, in turn provoking a motivation to engage. That is, when the current context of the child is considered (social situation of development, Vygotsky, 1994) and prior experiences are valued (Funds of knowledge, Vélez-Ibáňez & Greenberg, 1992) then motive development is possible. These connections create the conditions in which learning and subsequent development are possible. **It is concluded that when learning experiences are aligned to the identified motives of the participants (simultaneously: play, learning and social motives), learning can lead to development.**

The findings of the research provide evidence that children at particular levels within the institution each revealed the motives of play, social interaction and learning in different ways (Table 8.2), and that these motives were aligned to the child's social situation of development and growing funds of knowledge. The children in Year Prep displayed a social motive to

engage together in the many planned experiences. A play motive was visible through the ongoing use of improvisation as a means to learn. The learning motive resulted in the collective interactions with their world through a variety of purposeful experiences. The children in Year Three displayed a social motive to belong to their peer group, a play motive to explore and experience the reality of their world, and a learning motive to understand together the world in which they live. The Year 5 & 6 children displayed a social motive to identify an individual identity, their place within their world, a play motive to use thinking as a creative and or analytical process, and a learning motive to impact on their world. **It is concluded that the co-created, collective inquiries were in alignment with the social situation of development of the participants as they responded to the motives of the children, enabling learning and development of the participants.**

As discussed in Chapter Three, other schools engage children's active participation in the programs through play or inquiry. The developmental Schools in the Netherlands continue the play format with play being the leading activity for younger children, developing to inquiry for learning as the leading activity in the upper years of elementary school (van Oers, 2012a). Kravtsov (2008) discusses the crises at age five when the leading activity changes from play to learning. These focuses vary in contrast to those of the Reggio Collaborative schools (Cadwell, 1997), Discovery School NZ (Boyask et al., 2008), and MET schools, USA (Washor, 2003), whose programs have a theoretical focus on responding to the child's intrinsic motivation to engage in play and learning within a social context. The question this perspective raises is, Does the motivation arise though the desire to engage in cultural interactions with the aim to re-apply these new understandings within cultural interactions or simply to internalise the new understandings obtained within a social context, for personal growth? In each of the schools examined in the literature review, the practices are aligned and

produce exemplary learning opportunities for the children; the theoretical perspectives of the educators, however, differ. Hedegaard (2012) describes a theory of motives, informing the practice within schools aligned to cultural historical theory as "motives as an integration of demands, from environment and children's conditions, into psychological forces in children's activities" (p. 15). It is a wholistic approach combining the values and demands of the activity within the institution and a person's activity (Leontiev, 1978) within their social situation of development (Vygotsky, 1998). Hedegaard adds to these perspectives "Mill's concept of motives related to institutional societal demands that include the values by which a person will be able to influence his/her or other's situated activity" (p. 17).

Motive can then be seen as linking both institutions and children. From the institutional perspective, motives are seen as objectives that build on institutional values and purposes. From the child's perspective, motives reflect the child's social situation of development, which also implies the child's position within the institutional practice. The relation between the child's activity and institutional practice can be found in their shared experiences. To understand and research the children's motives, I have followed the child in his or her activities as intentional actions and interactions with others within the institutional school setting. **This process has been identified as a key outcome of this research project, involving the continual focus on the wholeness of the concept of education in the analysis. Through this, I have analysed the institutional values and purposes and followed the children in their activities, which are seen as intentional actions in collaboration with others. In doing so, I have determined the children's motives**. This approach sits in contrast to approaches used in other schools, whose view of motive development is seen as one or a combination of "drives and needs and their transformations into motivation as dynamic explanations for human activity with the motive intrinsic and coming from the person

(Maslow 1955, Freud 1983)" (Hedegaard, 2012 p.13) and/ or "societal demand as the primary forces" (Hedegaard, 2012, p.14) where the demands of society are gradually internalised. Hedegaard (2012, p.14) contends, "It is a theory of motives as located in the person's cognitive representation of the world (D' andrade, 1992, p. 30)".

Chaiklin (2012) states,

> In further work with the motive concept in a cultural–historical perspective, it is important to keep three interrelated perspectives – wholistic, developmental and activity –in the foreground, where a main objective for cultural historical research is to account for the development of psychological processes. (p. 217)

The meaning of all theoretical concepts, including motives (motivation) comes from their relationship within a system, not from an isolated definition. Thus a focus on the development of the whole person, including the development of personality sees the development of psychological functions placed in relation to the institutional demands in which a person engages, involving the role of motive within the process as a relation between practice, action and personal sense.

Chaiklin (2012) states, "Individual's can have motives, but the individuality of motives is always within the fabric of societal practice" (p. 219). The concept of motives as an intrinsic function is better interpreted as the concepts of will and subjective sense (Gonzales Rey, 2012). "Will can be defined as a conscious initiative and an instrument of free action, as a conductor of consciousness and initially as a higher psychic function. Without will, all development will be impossible" (Kravtsova & Kravtsov, 2012, p. 37). Will in this interpretation is seen as conscious action, and this can be the will to engage in imitation within

a social situation, or the will to apply newly integrated conceptual understandings or skills. Gonzales Rey (2012) explains:

> The relevance of sense for psychology lies in its ability to sustain a representation of the psyche which can be considered simultaneously as an individual and social phenomenon … Unlike sense, subjective sense is configured as a network of emotional and symbolic processes which emerge from the collateral effects of being human. (p. 53)

Gonzales Rey (2012) describes this process of being human, "Human life is a process of development as individuals create their courses of action arising from their experiences" (p. 59). **The findings of the study support the view that education must be seen in relation to this wholistic concept of the development of being human (see Chapters 7 & 8), reflecting the important values of humanity within our society (see Chapters 6 & 8), relevant to the world today (see Chapters 6 & 8), and which takes into account sustainability and the future growth of human capital.**

9.4.2 Inquiries aligned to zones of development.

The research question, 'How are the school principles of negotiated curriculum and collaborative program planning related to the social situation of development?' is responded to further by discussing the findings.

This section begins by reviewing the concept of the social situation of development and the concept of development through revisiting the processes of interpsychological functioning and intrapsychological functioning. As outlined in Chapter 2, Bozhovich (2009) explained that the "social situation of development [is one] in which the external and internal conditions are merged in a complex unity and on the features of which will depend both children's activity

and their behaviour and, consequently, the entire course of the formation of their personality" (p. 83).

The study found evidence that when the children's motives for engagement in collaborative inquiries are valued (Table 9.2), interpsychological functioning is provoked, challenging pre-existing understandings and theories through the collaborations (see Inquiry Research Projects - Year Prep, Year 3, Year 5 & 6 in Chapters 7, 8 and 9). This process leads to the development of new understandings and perceptions through a response to the collaborations involving intrapsychological functioning. The combined process of inter- and intrapsychological functioning enables learning to lead to development. Hedegaard's (2008b) definition for development, "A child's development can be thought of as a qualitative change in his or her motive and competences," (p. 11), is useful in the analysis of the overall findings. The development of the child leads to new motives and competencies, which provoke new engagement with their world. As outlined in the last section, this process was evidenced in this study through the changing motives of the children and their growing competencies as they engaged in more complex inquiries as age progresses from Year Prep to Year Three to Year Five & Six.

In discussing El'konin's theory (see Chapter 2) of the child's development Hedegaard and Chaiklin (2005) state:

> In the D.B.El'konin theory each period contains two stages that are characterized according to the relative dominance of motive in competence. The first stage is characterized primarily by motive development, while the second stage is characterized by knowledge/skill appropriation that is needed to realize the motives formed in the first stage. The appropriated knowledge and skill gives the possibility to participate in new practices, which opens the way from the acquisition of new motives

> and new period of development in which the further development of these motives are the focus of this period's first stage. (p. 63)

As stated in Chapter Two, Hedegaard and Chaiklin (2005) conceptualise child development as,

> a cultural process in which the child appropriates motives and knowledge through participation in institutional practices. The question is how to relate children's motives in the competencies appropriated through family and community life with subject-matter teaching in school (p. 61).

As was shown in Chapters 6 to 8, inquiries were contextually relevant to the children's *community life,* where the school valued the motives of the child, deliberately sought to include these in the institutional practices, and always framed them within the children's social situation of development. The inquiries investigated at each year level involved the exploration of concepts, framed wholistically across multiple disciplines, where the inferences of its meaning were embedded in the children's world. The collaborative processes provided the opportunities for interpsychological functioning through the exploration of concepts in their wholeness and within meaningful contexts aligned to the children's social situation of development, which in turn provoked new intrapsychological functioning within the child's system of concepts. **It is concluded that when the object under investigation is embedded in the child's world and is examined in its wholeness, conceptual development can be enhanced, leading to new intrapsychological functioning within the child's system of concepts.**

An important conclusion of this study is that a cultural-historical perspective of child development is a useful theoretical framework for understanding schools such as the case

study school because it takes into account the social situation of development of the children, where opportunities to create conditions for interpsychological functioning are featured, and where an alignment with the motives of the children is central. This allows for new intrapsychological functioning involving new understandings and provoking new competences, which can in turn develop new possibilities for interaction with their culture. The teachers in this study provided leading activities (outlined in Chapters 7, 8 and 9) through their collaborative planning, enabling children agency in their learning to provoke this development. The development occurred when these new experiences created a crisis in the child's current understanding of concepts, provoking new thinking within their system of concepts and enabling new competencies to form.

The study found evidence that the possibilities for interpsychological functioning were also created through the *co-creation* of the inquiry research projects within meaningful, purposeful contexts, provoking new intrapsychological functioning. This resulted in the children taking responsibility for their own behaviour in connection with the new understandings in the final stages of the inquiry projects. **It is concluded that provoking the possibilities for interpsychological and intrapsychological functioning through creating a dialectical context, can help learners take responsibility for their own behaviour and learning in connection with new understandings.**

The study also showed that the inquiry process of learning, when aligned with the zones of possible development, potential development, proximal development and actual development (Table 8.1), enabled meaningful, purposeful learning. The journey of the inquiry was co-created with teachers, who reflected on their documentation of the children's thinking and on collected evidence of children's learning to inform future planning. This demonstrated the

mediating role of the teacher planning, with a focus on alignment with the principle of *conceptual and contextual intersubjectivity* (Fleer, 2010*)*. This process leads to creating a zone for potential development (Kravtsova, 2008b), a social and cultural world that lies within the child's sphere of engagement, which leads to creating an individualised zone of proximal development (Vygotsky, 1978) where engagement with a more capable other can lead to actual development. This process was evident in each of the community research projects. A zone of potential development was evident through the explicit exploration of prior knowledge and immersion phases of the projects designed by the teachers (see Chapters 6 and 8). The zone of proximal development was made possible in each of the projects through the development of collaborative active research projects involving the development of new understandings and competencies, with actual development made visible to the community. Table 8.1 matches the possible zones of development with the phases of the inquiry design process. **It is concluded that the inquiry process of learning is effective when aligned to the Zones of Development (Kravtsova, 2008).**

The literature (see Chapter 3) on the Radical Local teaching project by Hedegaard and Chaiklin (2005) in New York, found the focus of their work with the children and staff was to how important it is to develop children's intellectual capabilities and motives in combination with content meaningful to their community life in educational settings, so that they can better understanding the conditions under which they live and thus be able to see possibilities for action. The Developmental Schools in the Netherlands (van Oers, 2012a; van Oers, 2012b) promote young children's broad development through an approach that emphasises the importance of cultural learning in ways that make authentic sense to the children, as this improves their abilities to participate in a wide range of cultural practices. Developmental Education aims primarily at broad development of children's agency, and at facilitating

children's appropriation of a wide range of cultural tools in different curricular areas (literacy, mathematics, art, technology, moral thinking, etc.)

In summary, it was found that the study school did respond to the social situation of the child through the processes of a co-created inquiry approach aligned with the zones of development of the children (i.e., potential, proximal and actual), as well as with the motives of the children (i.e., social, play and learning), within a context of relevance to the culture of the community. When the object under investigation is embedded in the child's world and is examined in its wholeness, exploring the interrelationship of its elements, conceptual development is possible, leading to new intrapsychological functioning within the child's system of concepts, and simultaneously to the learner taking responsibility for their own behaviour in connection with the new understandings. The study found evidence that when learning is connected to children's motives, enacted through collective research inquiries, enabling interpsychological functioning processes that lead to new intrapsychological functioning, the outcome can be argued from a theoretical perspective (see Chapter 2) to be the development of the child's personality and identity.

9.4.3 Dialectic of scientific concepts and everyday concepts.

In this section I respond to the research questions:

How does the interplay between scientific and everyday concepts occur as a result of the beliefs and practice as presented in the school's philosophy?

In what ways did the projects selected for investigation create a double move?

The findings reported in Chapters 6 to 8 provide evidence of the valuing of the child and their family's story, which provided the possibility for a *double move* between their everyday lives

and the development of scientific thinking. New concepts were effectively introduced to children within a relevant context, supporting Vygotsky's (1987a) argument that concepts need to be embedded to hold meaning for children. Co-creation of the curriculum supports the connection of learning to the lives of the children. As discussed previously, Vygotsky (1987a) argued that everyday concepts and scientific concepts should be thought of as being dialectically related to each other. Vygotsky (1987a) states:

> Scientific concepts have a different relationship to the child's personal experience than spontaneous concepts. In school instruction, concepts emerge and develop along an entirely different path than they do in the child's personal experiences. The internal motive that moves the child forward in the formation of scientific concepts are completely different than those that direct his [sic] thought in the formation of spontaneous concepts. When concepts are acquired in school, the child's thought is presented with different tasks than when his thought is left to itself. In sum, scientific concepts differ from spontaneous concepts in that they have a different relationship to the child's experience, in that they have a different relationship to the object that they represent, and in that they follow a different path from birth to final formation. (p. 178)

The school process which constitutes the institutional practice in this case study, focuses on experiences/tasks that provoke children's thought and the development of scientific concepts aligned to Fleer's (2010) process of *conceptual framing* as discussed in Chapter Two:

> Here the teacher keeps in mind the core concepts (scientific concepts) whilst ascertaining the child's everyday concepts in relation to the intellectual area being considered. Because the teacher wishes to transform the child's everyday practice through being conscious of the particular concepts being explored, it becomes important to consider how the scientific concepts may relate to the child. Determining both contexts and the thinking of the child in relation to the concept being explored is critical. Here a conceptual intersubjectivity is created. That is, the teacher can only enter the child's conceptual world if she/he finds out the child's everyday concepts and

> contexts that are meaningful for the child. Having both the everyday concept and the scientific concepts in mind allow for the generation of educational activity that frames the child's thinking. (p. 65)

Experiences that were co-created with children framed their thinking in relation to a movement between the child's scientific and everyday knowledge. The process took children's knowledge to a more theoretical understanding and in turn built upon and developed their empirical and narrative knowledge. This resulted in new possibilities for interaction and interpretations of their cultural existence by the children.

The inquiry projects outlined in this thesis have demonstrated the children's scientific thinking, where an emphasis on the development of conceptual understandings of the children is foregrounded. In Year Prep conceptual understandings of relationships was developed through exploring their interest in animals, in Year Three the concept of values was explored through investigating friendship and environmental sustainability and in Year 5 & 6 the concept of design was developed though re-designing their own learning space with an interior designer as a mentor. The linking of the development of new scientific understandings with everyday interests created the possibilities for the children to influence their everyday lives. The teachers have demonstrated a response to what Fleer (2010) stated was required by teachers,

> a deeper theoretical understanding of concept formation is needed to fully appreciate how the social process of teaching turns everyday practices into the conscious realization of concepts which children use to transform their everyday lives. (p.8)

The development of empirical knowledge was demonstrated as foundational to discipline knowledge, and the exploration of narrative knowledge valued conceptual conversations

within the everyday practices of children and their families throughout the initial period of the inquiry. Moving beyond empirical knowledge and paradigmatic thinking with a focus on categorising learning, to the development of theoretical knowledge with a focus on logical reasoning and concept formation was enacted throughout the research phase of the inquiry, in turn deepening narrative knowledge located within everyday experiences and practices as a result of the process. The process is complex, and is theorised thus by Hedegaard (2002):

> Theoretical knowledge and thinking methods use both empirical and paradigmatic thinking with narrative knowledge and methods to help children bring together their own personal knowledge with abstract knowledge. It is through the appropriation and transformation of subject-matter knowledge that children develop personal cognition. (Cited in Fleer, 2010, p. 56)

The educational experiences of the children within the institution enable the development of theoretical knowledge as part of an inquiry process in which they also develop competences "that they can use to analyse and understand the complex and changing world" (Hedegaard, 2002, p.36) enabling the double move of developing scientific knowledge to influence their everyday lives where the children are interacting and living their social existence.

Research by Hedegaard and Chaiklin (2005) on the 'Radical Local' teaching and learning approach had as its focus the *interplay of scientific and everyday concepts*. The practical research, as outlined in the literature review, took place in an after-school program for children in East Harlem, New York, where the engagement of the children in the instructional activities was achieved through encouraging them to be active in researching their own community and its origins. The examination of relevant scientific concepts developed through the investigations could then influence their everyday perceptions of their lives and their community.

> This dialectic of the child's everyday knowledge and its potential transformation from theoretical knowledge acquisition provides an important conceptual model for addressing a main concern of radical-local teaching and learning, namely to use the general concepts of disciplinary knowledge as a way to develop and refine personal, local knowledge. (Hedegaard & Chaiklin, 2005, p. 12)

Their research project, termed the *double move* approach, considered the relations between everyday concepts, subject matter concepts and local knowledge.

In its pedagogical planning, Radical-local Teaching and learning method uses motivating teaching-learning situations through the connections to learners' local community, which is the source of their everyday knowledge. Through relating subject matter content to the local community, enabling use of the learners' prior knowledge, and through relating general academic concepts to local, everyday situations, better conditions are provided for trying to realize the idea of transforming academic concepts into rich, active concepts that are used by the children in their thinking and acting.

The analysis of the findings found evidence that the purpose of each of the inquiry research projects (Year Prep - Relationships, Year Three Values - Identity/ Sustainability and Year 5 & 6 - Design) was the development of new competencies and conceptual understandings, which would lead to new awareness and opportunities for new societal participation. **It is concluded that the intended outcome of learning and development within the educational setting was new societal participation.**

9.4.4 Summary.

This section has outlined how the relationships and interactions of the participants underpinned the development of the institutional practices, which provided a context for the

development of participants and their culture. This context has at its basis an environment and programs that aim to provoke the alignment of emotion and intellect, create a culture where experiences have contextual relevance for the community and the child, and conceptual relevance for the child enabling learning to provoke development.

The *relationship between the participation structure and motive development* was discussed as a relation between the leading activity – developed by the teachers in their mediating role, linking conceptual and contextual relevance and reflecting the values of the culture within the institution – and the play, learning and social motives of the children, based upon a desire to engage with their world, which varied according to the social situation of development of the children.

It was shown how the school principles of *negotiated curriculum and collaborative programming* related to the *social situation of development* of the children by creating a dynamic for motive development through:

- A wholistic approach,
- Engaging the children in collaborative inquiries embedded in the child's world,
- Provoking interpsychological functioning through the collaborative participation in activities within their identified zone of potential and subsequently proximal and actual development
- Provoking new competencies and understandings within their system of conceptual understanding of the world, which can in turn provoke new interactions with their world.

A key aspect of interpsychological functioning was found to be the *co-creation* of the curriculum, involving a dialectical context, and the learners taking responsibility for their behaviour in connection with the new understanding.

Finally an account was given of how the development of the co-created inquiries enabled opportunities for an interplay of scientific and everyday concepts, creating a double move in which the concepts under investigation were embedded in the children's cultural context. The inquiries process valued the everyday lives of the children and provoked the child's development of scientific concepts which in turn created a double move influencing their everyday conception of the world, and created new possibilities for interaction and interpretation of their cultural existence.

9.5 Concluding Comments

> The essence of the new point of view (modern psychology) is that of the significance of the whole, which has its own specific properties and determines the properties and functions of the parts that constitute it, as foremost. (Vygotsky 1997a, p. 83)

Determining the properties and functions of the parts as they work in unison to enact the community of practice within the educational setting has been the critical and challenging aspect of this research analysis. The interplay of concepts identified is the main finding of this research, evidenced through the theorisation of the development of the individual and the culture. The participants and their culture are transformed through participation in the institutional setting. The interrelatedness of the constructs has been illustrated diagrammatically (Figure 9.8). The model has been constructed through the presentation of the findings theorised through the analyses in Chapters 7, 8 and 9. The model captures the interrelatedness of the elements that have been identified through the interpersonal,

institutional and personal lenses of analysis taking into account that all other elements remained within the background of the elements under review.

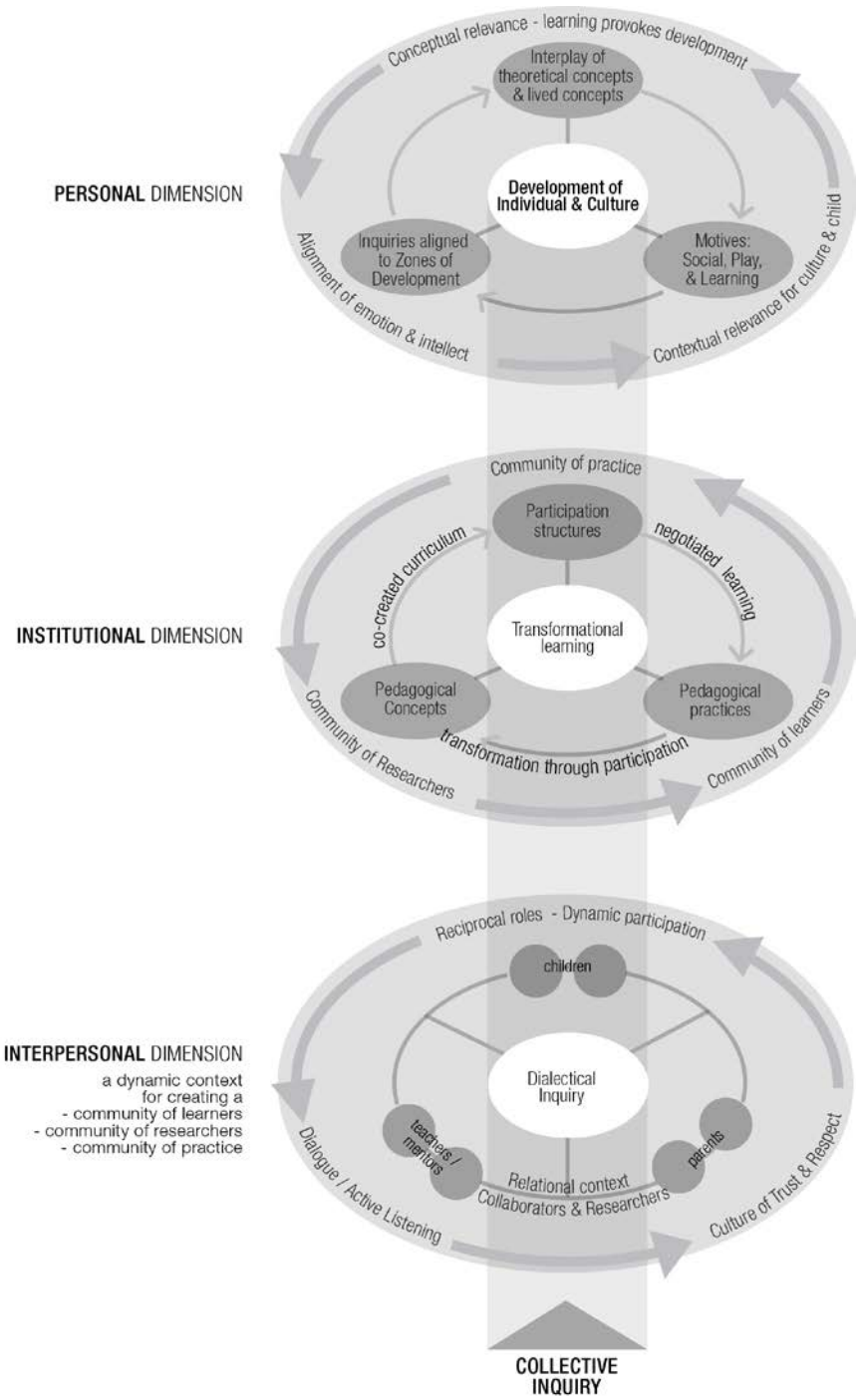

Figure 9.8. Wholistic and transformational model for learning and development of participants and culture in an educational institution.

Through analysis, the interrelated elements of the institutional practice (Table 7.1) were aligned with theoretical understandings of the practices. This formed the focus of the research approach 'practice developing research'. Emphasis has been placed upon understanding the dynamic of the interaction of the elements, with the analysis of this process based on understanding the transformations of the interrelationships through their examination from a theoretical perspective; in practice developing research "this is seen as "developing an understanding of theoretical – motivated ideas through the way one works in practice" (Chaiklin 2006, p. 14).

The findings being viewed wholistically, as I stated, is key to understanding this new approach to education within the institutional setting of a school. Vygotsky (1997a) stated, "For dialectical thinking, there is nothing new in the position that the whole does not arise mechanically by means of a sum of separate parts, but has specifically unique properties and qualities which cannot be deduced from a simple combining of the qualities of the parts" (p. 83).

The central column running through the three parts of Figure 9.8 unites these dimensions of interactions, organisational structure and the dialectic of transformational learning and development of the individual and the culture. The process is not individualistic; rather, it takes place in a dynamic collective involving all participants working consciously with concepts, creating new conceptualisations of concepts through the process of refraction through research. This leads to the growth of knowledge and the person. The process is dialectical with an ongoing investigation between and within all elements of the model. The model of inquiry acts as a research approach for all participants. These elements come

together as a wholistic dialectical system of elements in which one element does not exist without the other.

The approach to education depicted in the model (Figure 9.8) is defined as a m*ethodology for* ***'Collective Inquiry'***. The wholistic model indicates the complexity of this methodology and ideal (Vygotskian) conditions for the enactment of this system. Table (9.1) outlines the methodological principles of the approach, Table (9.2) outlines practices within this methodology and Table (9.3) outlines the theoretical concepts used to build this methodology.

Table 9.1
Collective Inquiry Methodology

Methodological Principles	Definition
Wholistic	Organising system, system of beliefs, all-inclusive Practice, organisation, procedure, whole, complete,
Collective	Shared by all Shared, cooperative, enterprise, alliance, relationship, united, reciprocity, combined, mutual, group, democracy
Agency	Act within a context, perform role for the first time, give rise to something Generate, form, produce, make, bring into being originate, innovate
Dialectical	Debate resolving conflict, tension between conflicting ideas, investigation of truth through discussion, Hegelian process, Socratic method for revealing truth Tension, contention, discussion,
Inquiry	Act of asking, research Question, investigate, review, probe, study, survey, examination, analysis, integrate, inquisition

Table 9.2

Terminology of Practices within this Methodology

Participation Structures

- Relationships based on trust and respect
- Reciprocal roles
- Collaborative planning and implementation
- Collaborative teaching
- Collaborative learning
- Co creation of learning
- Variety of groupings
- Conversations / dialectic/ dialogue
- Open communication
- Negotiated learning
- Partnerships- children, teachers, parents, mentors
- Dynamic participation
- Variety of expressive mediums
- Time management

Sources of Learning

- Collaborative inquiry
- Wholistic Inquiry process
- Learning agreement time
- Workshops, targeted teaching, conferencing
- Imitation
- Trans disciplinary curriculum
- Provocations
- Relevance to lives/ culture
- Purposeful learning
- Authentic learning
- Motivation
- Physical Environment- co-current diverse activities i.e. symbolic languages

Making Learning Visible

- Documentation
- Portfolios
- Project presentations
- Learning Journey Document
- Authentic assessment

Table 9.3

Theoretical Concepts Used to Build this Methodology

- Theoretical Concepts Used to Build this Methodology: *identifies new concepts
- Agency of children
- *Co creating curriculum**
- Community of learners (Lave & Wenger, 1991)
- *Collective Inquiry**
- Conceptual and contextual intersubjectivity (Fleer, 2010)
- Conscious awareness (Vygotsky, 1987)
- *Contextual cultural research**
- Development (Hedegaard, 2012; Vygotsky, 1997a)
- Dialectical community of inquiry*
- Double move between everyday and scientific knowledge (Hedegaard & Chaiklin, 2005)
- Essence of learning and development – constructions of personality, identity, one's own person
- Everyday and scientific concepts – unity (Vygotsky, 1987)
- *Imitation (Vygotsky) for learning – teachers and children engaging with experts**
- Intent Participation (Rogoff, 2003)
- Inter- and intrapsychological functioning / development (Vygotsky, 1978)
- Mediating role of the teacher (Siraj-Blatchford, 2009)
- *Mental construct of Learning to Learn**
- Motive development (Vygotsky; Leontiev, 1978)
- *Motives – Play, Learning & Social (Years P-6) **
- Obshchenie (Kravtsova 2008)
- Pereizhivanie- unity of affect and intellect (Vygotsky, 1994)
- Practice developing research (Chaiklin, 2011)
- *Reciprocal positioning (Kravtsova 2008)- above, below and beside by both student and teacher**
- Sense of self (Rey, 2012)
- Social situation of development (Vygotsky, 1998; Bozhovich, 2009)
- *Theoretical knowledge built from narrative and empirical knowledge within inquiry**
- Transformation through participation/ individual / group/ culture (Rogoff, 2003)
- Valuing Funds of Knowledge (Vélez-Ibáňez & Greenberg, 1992)
- Will (Rey, 2012)
- Zones of Development- Potential, Proximal, Actual (Kravtsova, 2008)

The next section firstly discusses the broader implications of the findings leading to the m*ethodology* ***'Collective Inquiry'*** in relation to education for today and the future. What follows is a discussion of recommendations based on my experience in this study that may be helpful for other researchers or leaders wishing to enact change based upon the theoretical and methodological findings outlined above.

9.6 Suggestions from these Findings for Future Practice

> The concept does not emerge in a static and isolated form but in the vital process of thinking and resolving a task… There is an initial process in which concepts are worked out. This is followed by a stage in which these concepts are transferred to new objects, then by the use of the concept in free association, and finally, by the application of the concept in the formation of judgements and definition of developed concepts. (Vygotsky, 1987, p. 128)

The findings of this study show that meaningful learning through a ***'Collective Inquiry'*** methodology develops children with the necessary skills and conceptual understandings to participate in and contribute effectively to society. The children not only develop the skills of literacy and numeracy as vital skills to engage in societal and cultural practices, they also develop further qualities such as being competent collaborators, being able to engage in critical, lateral and creative thinking, and in the process of inquiry involving questioning, research and action. These attributes focus development of the child and the group of children wholistically, not limiting it to isolated subskills. Curriculum developers need to make more prominent the importance of this characteristic of education, which is present in the VELS/ AusVELS (VCAA, 2013) as a triple helix model of the entwined elements of the learning of the child. This aspect of VELS/ AusVELS is however not the dominant feature; the dominant feature is the various curriculum domains, and their links to assessment. The teacher's

accountability to their employer is currently linked directly to the outcomes of assessment measures, predominantly based on data from the assessment of children in the areas of literacy and numeracy, as this is the basis for the comparison of successful schools.

The findings of this study call for a wholistic assessment measure, taking into account a variety of characteristics of the child in this measure, such as the ability to collaborate, follow through an inquiry approach and problem solve. This is important not only for assessment at the school level, but also internationally within comparisons of educational systems around the world by the OECD (Organisation for Economic Co-operation and Development) and in Australia in the government standardised NAPLAN (National Assessment Program Literacy and Numeracy) assessment which needs to include further measures of characteristics of the learner within its feedback to families. This is required as it is these assessment measures that are hindering the development of a cohesive educational program, meeting the combined intellectual, social and emotional needs of the child and of society.

Education needs to have at its core the development of a moral, objective and equitable society. I believe the findings of this study show that an education system theorised through cultural historical theory supports this purpose. I have stated that Vygotsky believed that direct instruction for concept development was impossible. Learning based on instruction about concepts with no meaning leads to the child's ability to verbalise the concept, often interpreted as the presence and understanding of the concept, yet the child is unable to apply the meaning of the concept to new situations. What is important is the child's ability to use the concept in new situations, and also to use the concept to develop new understandings within a system of concepts. This process of learning is also critical for effective, just participation in society.

I have reported that Rogoff's research (2003) found that in communities where children were included in the activities of the adult community, the children's play reflected these activities, whereas in communities where children were separated from adult activity, their play reflected what they had observed, such as television super heroes. The process of learning with adult activity is described as "intent participation" during the ongoing, shared-endeavour activities that they participate in, termed in this research study '*Collective Inquiry'*. Rogoff's research concluded that,

> Learning through keen observation and listening, in anticipation of participation, seems to be especially valued and emphasized … They observe and listen with intent concentration and initiative, and their collaborative participation is expected when they are ready to help in shared endeavours. (Rogoff et al., 2003, p. 176)

Learning is seen as a process of transformation through intent participation in ongoing cultural activities, which within the methodology developed from this research is described as children engaging collaboratively in wholistic learning in authentic contexts.

The concept of motivation and its relationship to development has been informed by Hedegaard's (2002) theorisation. By differentiating between the institutional practice and child's activity, one can see the interrelationship between the child's activities and the societal conditions as mediated by the institutional objectives of practices and thereby understand the self-movement towards development of the child. The focus is not the knowledge the child holds or the activity the child can complete, but the efforts of the child to transform their participation through developed understandings and purposes for engagement. Again the focus emphasises the alignment of the practices, with the development of children towards being able to participate effectively in society.

The participants' roles within this methodology also change. Teachers and children can take multiple positions within the practice, as leaders, mentors, learners and collaborators. Mentoring is not about collaboratively completing an activity providing intervention during difficult aspects of the task; it is a process of demonstrating or asking leading questions to support the thinking. The teacher's role is a mediating role, involving the development of a program based on conceptual and contextual intersubjectivity (Fleer, 2010). These varying roles, value highly the funds of knowledge each child brings to the community of learners. Within this methodology each participant is valued for their contributions – for example, interpersonal skills, creative thinking, or problem solving – providing opportunities for the children's development of self-assuredness, personality and identity.

Thus this methodology meets the needs of our society in the 21st century, just as the industrial model met the needs of the early 20th century. We have a moral requirement to provide a relevant educational program for our children. Children have a right to such a program.

Leaders in schools wanting to implement change need to focus on the changes wholistically, beginning with determining the theoretical foundations for their thinking and practices. The theorised principles need to be embedded in all aspects of the institutional practice: relationships, organisational and management structures and pedagogy.

By drawing upon a cultural historical theoretical justification of learning and teaching approaches leading to child development, this research has demonstrated that it is very complex to provide the necessary conditions for an effective model of schooling. The process requires the need for understanding by practitioners of the theoretical perspective of their practice and the re-thinking of organisational structures so they may be aligned with this

theory. Then future development of the practice will occur based on the transformations of the interrelationships of the elements that enable the practice to occur.

This section has discussed the implications that this study has for the field of education within schools. However, it is recognised that the complexity of this study provided limits to the knowledge that could be generated, so recommendations for future research are discussed in the following section.

9.7 Recommendations for Future Research

Throughout this thesis, due to the complexity of the whole practice of schooling being under investigation, many elements require further research to elaborate all aspects of the methodology model for ***'Collective Inquiry'***. Key elements include: assessment methods and criteria, the embedding of literacy and numeracy within the inquiry, teachers as researchers, imitation through the use of experts, and alignment of the physical environment with the inquiry process.

Assessment within this methodology is complex. A new approach to assessment is required, which provides relevant contextual opportunities to assess children within the collaborative environment in which they are learning. Assessment is required at multiple stages of the child's development, within the zones of potential, proximal and actual development. Assessment needs to go beyond what the child can do in isolation, out of an authentic context.

Embedding literacy and numeracy within the inquiry is a challenge faced by teachers. This links to the need for assessment practices of teaching and learning to be meaningfully contextualised, and to lead the planning of relevant future experiences and learning opportunities. It also entails an understanding of the conceptual development required to

become proficient in literacy and numeracy, and the misconceptions often made by children. Research into the effect of embedding literacy and numeracy within the inquiry approach to learning would contribute greatly to the process of transformational learning.

In this methodology, teachers need to be researchers who continually develop their practice, guided by the principles of continuous relevance to the participants and the culture and responding to the ongoing research and knowledge development in the field of their endeavour. Further research into this role of teachers as researchers will lead teachers to see themselves as capable and responsible for the development of their profession, as well as enable the development of further links between the university sector and the schools sector.

Imitation, through the use of experts by both the students and teachers within this methodology, is a powerful means of learning. Research into the methods, benefits and possibilities of this approach would provide more detailed insights into the effectiveness of this idea and possibilities for its further development.

The alignment of the physical environment with the inquiry methodology requires a complete re-thinking of the design of learning spaces, and in particular the needs of the third layer, as described earlier in this chapter. What resources and materials need to be available to children within a learning space for use, at point of need, by the students?

These suggestions provide possibilities for further enriching our knowledge of the methodology for ***'Collective Inquiry'*** that can assist leaders to transform their school practice and develop their schools as 'communities of learners' developing a 'community practice' as a *community of researchers*.

9.8 Conclusion

This final chapter has presented the findings of this research study and the subsequent model of ideal conditions, conceptual understandings and constructs and their elements for transformational learning leading to the development of the individual and the culture. Also a learning, development and research methodology was developed and termed *'Collective Inquiry',* based on cultural historical theoretical concepts in regard to learning and development. I began this thesis by stating this would be a complex journey, moving back in time through the growth of theories of development and educational practices, to the current practices occurring around the world today and the ongoing development of cultural historical theory. This process led to the interpretation of all of this knowledge and to building upon the ideas of others in the analysis of the practices within a school in Melbourne. In turn, this led to the creation of a new way to understand contemporary practices of education in schools, relevant to our culture and time. The new model of inquiry acts as a research approach enabling agency for all participants within the wholistic dialectical system of 'Collective Inquiry' resulting in the growth of knowledge and the person.

The educational reform at a government primary school was analysed in regards to the relationship between practice and theory. Defined as 'collective inquiry' the approach embraced Vygotsky's theory of the relationship between learning and development, intellect and emotion and motives as a cultural process. The approach has a focus on the concepts of a community of learners and researchers, inquiry learning and the influence of culture and context on learning.

This new understanding does not simply provide a step-by-step description of an approach to education within schools or a list of elements that must be included; rather, it seeks to use and

develop theory and to embed this into the reasoning behind all actions within the institution. To continually transform the practice and the participants in that practice, the focus must remain on the wholistic character of the practice of education, not the enactment of separate elements. The essence of the findings was that the whole is not a matter of the sum of its parts, rather the elements of the community of practice and an interplay of concepts create their own properties and functions that I have termed, '**Collective inquiry'**. By using cultural historical theoretical concepts (Table 9.1) the complexity of the task of relating theory to practice in relation to learning and development, and the associated concepts, becomes meaningful and logical, as it is based in contextual situations for its analysis and interpretation. The methodology principles, associated practices and theoretical perspective (Tables 9.1, 9.2 and 9.3) and conditions to enact the ideal (Figure 9.8), all bring together a conscious methodology for planning, implementing and evaluating the desired outcomes of a *contextual, participative, community model of pedagogical reform, enacted within a primary school.*

In concluding this thesis I would like to revisit one of my motivations to embark on this journey. This is illustrated by two moments in time during the education of my own child (who had been fortunate to have an early learning and primary education based on trusting relationships and project-based learning) by sharing a personal anecdote of two conversations we had about education.

Calvin (my then 9 year old son), whilst watching a cartoon of a school classroom in America, involving the children all sitting in tablet chairs, raising their hands in an attempt to get the attention of the adult standing at the front of the room commented, 'What is that? What are they doing?' I replied, 'That is what schools are like most of the time.' Calvin thought for a few moments and then replied, ' No, no one would ever do that to children!'

Secondly, having just visited a local secondary college as part of an orientation program to the school, having visited multiple learning areas within the school, Calvin (now 12 years of age) commented, 'So is this how it works, you spend several weeks in an area completing a project?' 'No', unfortunately I replied (the students would move every 50 minutes to a new teacher and new subject).

Calvin did however take with him to Secondary College what he had learnt from his education so far: the ability to collaborate and build relationships, the skills of a learner, a deep interest in learning new knowledge, and an awareness of and developing opinions about what was happening in society and the world today, and the place of the past and the present in creating the existing culture.

This personal account reveals the ultimate importance of this study – the democratic rights of children to a meaningful, enjoyable childhood. Children are the holders of the future. It is they who will carry on and form the future society. I propose that this research makes a valuable contribution to our understanding of how schools can provide a system that enables transformative learning, leading to the development of the individual and the culture, in a meaningful, enjoyable context, enabling the development of the identity of the participants. In turn it builds a competent, civil and just society.

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Appendices

Appendix 1: Interview Questions

Interview Questions: Teachers

What is the relationship between the teacher and learner?

What is the motivation of the child to learn at school?

What is the role of the teacher?

What is the role of the learner?

What is the role of the parent?

What are the prominent methods of learning?

What are the methods of communication between the three players (teacher, learner, parent) in the learning community?

How is learning best assessed?

Interview Questions: Parents

What is the relationship between the teacher and learner?

What is the motivation of your child to learn at school?

What is the role of the teacher?

What is the role of the learner?

What is the role of the parent?

What are the methods of learning used?

What are the methods of communication between the three players (teacher, learner and parent) in the learning community?

How is learning best assessed?

Interview Questions: Year 3 & Year 5 Children

What is your relationship with your teacher?

What is the motivation for you to learn at school?

What is the role of your teacher?

What is your role at school?

What is the role of your parent?

How do you learn at school?

How do you and your teacher communicate?

How does your parent know about your learning at school?

How do you know that you have learnt something?

Interview Questions: Year Prep Children

What is your relationship with your teacher?

Why do you want to learn at school?

What is your teacher's job?

Why do you come to school?

How are your parents involved with your school?

How do you learn at school?

How do you and your teacher share ideas?

How does your parent know about your learning at school?

How do you know that you have learnt something?

Appendix 2

Explanation Statements and Consent Forms

MONASH University

August 2006

Explanatory Statement - Parents

Title: Theories and Practices of Learning in Educational Reform.

This information sheet is for you to keep.

My name is Esme Capp and I am conducting a research project with Marilyn Fleer a Professor in the Department of Education, towards a Doctor of Philosophy (PhD) at Monash University. I will be writing a thesis of 100,000 words. I am the researcher and full time participant in the school in the co role of Assistant Principal.

Selection of participants:

The research project is a case study of _____Primary School. Parents from the school have been invited to participate. The Department of Education and Training has given permission for the research project to take place.

The aims of the research are:

- To research and analyse a school's project to make schooling relevant to the 21st century.
- To examine why and how a contextual, participative, community model of schooling:

-produces effective learning

-respects the rights and potential of children

-responds to the historical, current and future needs of society.

Possible benefits for society are:

- Analysis and documentation of whole school reform to make schooling relevant to the 21st century, using ongoing action research.
- Validation of children's right and potentials to make meaning of their complex world in a relevant trans-disciplinary context.
- Validation of teachers, children and parents as researchers in a community of learners.

The research involves:

Audio or video taping of focus group discussions, semi-structured interviews, classroom observations, and the auditing of current school documents.

The time the research will take.

The parent group focus discussion will take approximately an hour. The questions will be:

What is the relationship between the teacher and learner?

What is the motivation of your child to learn at school?

What is the role of the teacher?

What is the role of the learner?

What is the role of the parent?

What are the methods of learning used?

What are the methods of communication between the three players (teacher, learner and parent) in the learning community?

How is learning best assessed?

Inconvenience/discomfort

In the unlikely event that participants become distressed during the interviews, counselling will be made available.

Withdrawal from the research

Participants are free to refuse consent altogether without having to justify that decision. Participants may withdraw their consent and discontinue participation in this project at any time without giving reason.

Confidentiality

Neither your name nor any other identifying information will be used or published and data will be destroyed at the completion of analysis.

Storage of data

Storage of the data collected will adhere to the University regulations and kept on University premises in a locked cupboard/filing cabinet for 5 years. A report of the study may be submitted for publication, but individual participants will not be identifiable in such a report.

Use of data for other purposes

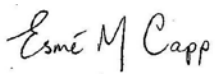
The data from this research may be used for other purposes such as conference papers, book chapters and further research. Because it is anonymous data, nobody will be named and you will not be identified in any way.

Results

If you would like to be informed of the aggregate research finding, please contact Esme Capp on 97952007 or email capp.esme.e@edumail.vic.gov.au. The findings are accessible after June 2008.

If you would like to contact the **researchers** about any aspect of this study, please contact the Chief Investigator:	If you have a **complaint** concerning the manner in which this research **<insert your project number here, i.e. 2006/011>** is being conducted, please contact:
Professor Marilyn Fleer **Email:marilyn.fleer@education.monash.edu.au** Phone : 99044235 Fax: 9904 4027	Human Ethics Officer Standing Committee on Ethics in Research Involving Humans (SCERH) Building 3d Research Office Monash University VIC 3800 Tel: +61 3 9905 2052 Fax: +61 3 9905 1420 Email: scerh@adm.monash.edu.au

Thank you.



Esme Capp

Consent Form – Parents

Title:

Theories and Practices of Learning in Educational Reform.

NOTE: This consent form will remain with the Monash University researcher for their records

I agree to take part in the Monash University research project specified above. I have had the project explained to me, and I have read the Explanatory Statement, which I keep for my records. I understand that agreeing to take part means that I am willing to:

I agree to take part in a focus group discussion ☐ Yes ☐ No

I agree to allow the focus group to be audio-taped or video taped ☐ Yes ☐ No

I agree to allow the data collected to be used in future research ☐ Yes ☐ No

I agree for the data collected to be used in conference

presentations, papers and book chapters arising from this research ☐ Yes ☐ No

I understand that my participation is voluntary, that I can choose not to participate in part or all of the project, and that I can withdraw at any stage of the project without being penalised or disadvantaged in any way.

I understand that any data that the researcher extracts from the focus group for use in reports or published findings will not, under any circumstances, contain names or identifying characteristics.

I understand that I will be given a transcript of data concerning me for my approval before it is included in the write up of the research.

I understand that any information I provide is confidential, and that no information that could lead to the identification of any individual will be disclosed in any reports on the project, or to any other party.

I understand that data from the focus group will be kept in a secure storage and accessible to the research team. I also understand that the data will be destroyed after a 5 year period unless I consent to it being used in future research.

Participant's name

Signature

Date

Consent Form – Parents: Interviewer

Title: Theories and Practices of Learning in Educational Reform.

NOTE: This consent form will remain with the Monash University researcher for their records

I agree to take part in the Monash University research project specified above. I have had the project explained to me, and I have read the Explanatory Statement, which I keep for my records. I understand that agreeing to take part means that I am willing to:

I agree to take part in a training session to lead the focus

group discussions. ☐ Yes ☐ No

I agree to lead the focus group discussions ☐ Yes ☐ No

I agree to allow the focus group to be audio-taped or video taped ☐ Yes ☐ No

I agree to allow the data collected to be used in future research ☐ Yes ☐ No

I agree for the data collected to be used in conference

presentations, papers and book chapters arising from this research ☐ Yes ☐ No

I understand that my participation is voluntary, that I can choose not to participate in part or all of the project, and that I can withdraw at any stage of the project without being penalised or disadvantaged in any way.

I understand that any data that the researcher extracts from the focus group for use in reports or published findings will not, under any circumstances, contain names or identifying characteristics.

I understand that I will be given a transcript of data concerning me for my approval before it is included in the write up of the research.

I understand that any information I provide is confidential, and that no information that could lead to the identification of any individual will be disclosed in any reports on the project, or to any other party.

I understand that data from the focus group will be kept in a secure storage and accessible to the research team. I also understand that the data will be destroyed after a 5 year period unless I consent to it being used in future research.

Participant's name

Signature

Date

MONASH University

August 2006

Explanatory Statement – Parents of children

Title: Theories and Practices of Learning in Educational Reform.

This information sheet is for you to keep.

My name is Esme Capp and I am conducting a research project with Marilyn Fleer a Professor in the Department of Education, towards a Doctor of Philosophy (PhD) at Monash University. I will be writing a thesis of 100,000 words. I am the researcher and full time participant in the school in the co role of Assistant Principal.

Selection of participants:

The research project is a case study of _____ Primary School. Your child's classroom teacher has selected your child as a possible participant. The Department of Education and Training has given permission for the research project to take place.

The aims of the research are:

- To research and analyse a school's project to make schooling relevant to the 21st century.
- To examine why and how a contextual, participative, community model of schooling:

  -produces effective learning

  -respects the rights and potential of children

  -responds to the historical, current and future needs of society.

Possible benefits for society are:

- Analysis and documentation of whole school reform to make schooling relevant to the 21st century, using ongoing action research.
- Validation of children's right and potentials to make meaning of their complex world in a relevant trans-disciplinary context.
- Validation of teachers, children and parents as researchers in a community of learners.

The research involves:

Audio and video taping of focus group discussions, semi-structured interviews, classroom observations, and the auditing of current school documents.

Children: Year 3 & Year 5

I am looking for children in years three and five who are willing to take part in an interview conducted by trained year 5 children to discuss in a group questions such as:

What is your relationship with your teacher?

What is the motivation for you to learn at school?

What is the role of your teacher?

What is your role at school?

What is the role of your parent?

How do you learn at school?

How do you and your teacher communicate?

How does your parent know about your learning at school?

How do you know that you have learnt something?

Children: Year Prep

What is your relationship with your teacher?

Why do you want to learn at school?

What is your teacher's job?

Why do you come to school? How are your parents involved with your school?

How do you learn at school?

How do you and your teacher share ideas?

How does your parent know about your learning at school?

How do you know that you have learnt something?

The time the research will take.

Your child's part in the project will involve taking part in the discussion group, for approximately 30 minutes, during learning agreement time when children have selection over the activities they are involved in.

Inconvenience/discomfort

In the unlikely event that participants become distressed during the interviews, counselling will be made available.

Withdrawal from the research

Participants are free to refuse consent altogether without having to justify that decision. Participants may withdraw their consent and discontinue participation in this project at any time without giving reason.

Confidentiality

Neither your child's name nor any other identifying information will be used or published and data will be destroyed at the completion of analysis. Please be aware the researcher as a teacher is mandated to report any case of child abuse.

Storage of data

Storage of the data collected will adhere to the University regulations and kept on University premises in a locked cupboard/filing cabinet for 5 years. A report of the study may be submitted for publication, but individual participants will not be identifiable in such a report.

Use of data for other purposes

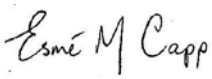
The data from this research may be used for other purposes such as conference papers, book chapters and further research. Because it is anonymous data, nobody will be named and your child will not be identified in any way.

Results

If you would like to be informed of the aggregate research finding, please contact Esme Capp on 97952007 or email capp.esme.e@edumail.vic.gov.au. The findings are accessible after June 2008.

If you would like to contact the **researchers** about any aspect of this study, please contact the Chief Investigator:	If you have a **complaint** concerning the manner in which this research **<insert your project number here, i.e. 2006/011>** is being conducted, please contact:
Professor Marilyn Fleer **Email:marilyn.fleer@education.monash.edu.au** Phone : 99044235 Fax: 9904 4027	Human Ethics Officer Standing Committee on Ethics in Research Involving Humans (SCERH) Building 3d Research Office Monash University VIC 3800 Tel: +61 3 9905 2052 Fax: +61 3 9905 1420 Email: scerh@adm.monash.edu.au

Thank you.



Esme Capp

Consent Form – Parental Consent

Title: Theories and Practices of Learning in Educational Reform.

NOTE: This consent form will remain with the Monash University researcher for their records

I agree that _____may take part in the Monash University research project specified above. I have read the Explanatory Statement, which I keep for my records. I understand that agreeing to take part means that I am willing to allow my child to:

Take part in focus group discussions	☐	Yes	☐	No
I agree to allow the focus group to be audio-taped or video taped	☐	Yes	☐	No
I agree to allow the data collected to be used in future research	☐	Yes	☐	No
I agree for the data collected to be used in conference presentations, papers and book chapters arising from this research	☐	Yes	☐	No

I understand that my child's participation is voluntary, that I can choose for them not to participate in part or all of the project, and that I can withdraw them at any stage of the project without being penalised or disadvantaged in any way.

I understand that any data that the researcher extracts from the focus group for use in reports or published findings will not, under any circumstances, contain names or identifying characteristics.

I understand that I will be given a transcript of data concerning my child for my approval before it is included in the write up of the research.

I understand that any information my child provides is confidential, and that no information that could lead to the identification of any individual will be disclosed in any reports on the project, or to any other party.

I understand that data from the focus group will be kept in a secure storage and accessible to the research team. I also understand that the data will be destroyed after a 5 year period unless I consent to it being used in future research.

Participant's name:

Participant's age:

Parent / Guardian's relationship to participant:

Parent / Guardian's Name:

Parent / Guardian's Signature:

Date:

Consent Form – Parental Consent: Interviewers

Title: Theories and Practices of Learning in Educational Reform.

NOTE: This consent form will remain with the Monash University researcher for their records

I agree that (insert full name of participant) may take part in the Monash University research project specified above. I have had the project explained to me, and I have read the Explanatory Statement, which I keep for my records. I understand that agreeing to take part means that I am willing to allow (insert full name of participant) to:

Take part in training sessions to conduct the interviews. ☐ Yes ☐ No

Lead discussion groups at Years Prep, Year 3 and Year 5. ☐ Yes ☐ No

The focus group to be audio-taped or video taped. ☐ Yes ☐ No

I agree to allow the data collected to be used in future

Research. ☐ Yes ☐ No

I agree for the data collected to be used in conference

presentations, papers and book chapters arising from this research. ☐ Yes ☐ No

I understand that my child's participation is voluntary, that I can choose for them not to participate in part or all of the project, and that I can withdraw them at any stage of the project without being penalised or disadvantaged in any way.

I understand that any data that the researcher extracts from the focus group for use in reports or published findings will not, under any circumstances, contain names or identifying characteristics.

I understand that I will be given a transcript of data concerning my child, for my approval before it is included in the write up of the research.

I understand that any information my child provides is confidential, and that no information that could lead to the identification of any individual will be disclosed in any reports on the project, or to any other party.

I understand that data from the focus group will be kept in a secure storage and accessible to the research team. I also understand that the data will be destroyed after a 5 year period unless I consent to it being used in future research.

Participant's name:

Participant's Age:

Parent / Guardian's Name:

Parent / Guardian's relationship to participant:

Parent / Guardian's Signature:

Date:

MONASH University

August 2006

Explanatory Statement - Teachers

Title: Theories and Practices of Learning in Educational Reform.

This information sheet is for you to keep.

My name is Esme Capp and I am conducting a research project with Marilyn Fleer a Professor in the Department of Education, towards a Doctor of Philosophy (PhD) at Monash University. I will be writing a thesis of 100,000 words. I am the researcher and full time participant in the school in the co role of Assistant Principal.

Selection of participants:

The research project is a case study of _____ Primary School. Teachers in Years Prep, Three and Five have been invited to participate, to gain data from a cross section of the school. The Department of Education and Training has given permission for the research project to take place.

The aims of the research are:

- To research and analyse a school's project to make schooling relevant to the 21st century.
- To examine why and how a contextual, participative, community model of schooling:

  -produces effective learning

  -respects the rights and potential of children

  -responds to the historical, current and future needs of society.

Possible benefits for society are:

- Analysis and documentation of whole school reform to make schooling relevant to the 21st century, using ongoing action research.
- Validation of children's right and potentials to make meaning of their complex world in a relevant trans-disciplinary context.
- Validation of teachers, children and parents as researchers in a community of learners.

The research involves:

Audio and video taping of focus group discussions, semi-structured interviews, classroom observations, and the auditing of current school documents.

The time the research will take.

Your part in the project will involve participation in an interview of approximately 30 minutes duration and a focus group session of one hour duration.

The focus questions of the interview will be:

What is the relationship between the teacher and learner?

What is the motivation of the child to learn at school?

What is the role of the teacher?

What is the role of the learner?

What is the role of the parent?

What are the prominent methods of learning?

What are the methods of communication between the three players (teacher, learner, parent) in the learning community?

How is learning best assessed?

Inconvenience/discomfort

In the unlikely event that participants become distressed during the interviews, counselling will be made available.

Withdrawal from the research

Participants are free to refuse consent altogether without having to justify that decision. Participants may withdraw their consent and discontinue participation in this project at any time without giving reason.

Confidentiality

Neither your name nor any other identifying information will be used or published without and data will be destroyed at the completion of analysis.

Storage of data

Storage of the data collected will adhere to the University regulations and kept on University premises in a locked cupboard/filing cabinet for 5 years. A report of the study may be submitted for publication, but individual participants will not be identifiable in such a report.

Use of data for other purposes

The data from this research may be used for other purposes such as conference papers, book chapters and further research. Because it is anonymous data, nobody will be named and you will not be identified in any way.

Results

If you would like to be informed of the aggregate research finding, please contact Esme Capp on 97952007 or email capp.esme.e@edumail.vic.gov.au. The findings are accessible after June 2008.

If you would like to contact the **researchers** about any aspect of this study, please contact the Chief Investigator:	If you have a **complaint** concerning the manner in which this research **<insert your project number here, i.e. 2006/011>** is being conducted, please contact:
Professor Marilyn Fleer **Email:marilyn.fleer@education.monash.edu.au** Phone : 99044235 Fax: 9904 4027	Human Ethics Officer Standing Committee on Ethics in Research Involving Humans (SCERH) Building 3d Research Office Monash University VIC 3800 Tel: +61 3 9905 2052 Fax: +61 3 9905 1420 Email: scerh@adm.monash.edu.au

Thank you.

Esme M Capp

Esme Capp

Consent Form – Teachers

Title: Theories and Practices of Learning in Educational Reform.

NOTE: This consent form will remain with the Monash University researcher for their records

I agree to take part in the Monash University research project specified above. I have had the project explained to me, and I have read the Explanatory Statement, which I keep for my records. I understand that agreeing to take part means that I am willing to:

I agree to be interviewed by the researcher	☐	Yes	☐	No
I agree to allow the interview to be audio-taped and/or video-taped	☐	Yes	☐	No
I agree to make myself available for a further interview if required	☐	Yes	☐	No
I agree to involvement in a focus group	☐	Yes	☐	No
I agree to allow the focus group to be audio-taped or video taped	☐	Yes	☐	No
I agree to allow observations of my classroom	☐	Yes	☐	No
I agree to allow the data collected to be used in future research	☐	Yes	☐	No

I agree for the data collected to be used in conference presentations, papers and book chapters arising from this research ☐ Yes ☐ No

I understand that my participation is voluntary, that I can choose not to participate in part or all of the project, and that I can withdraw at any stage of the project without being penalised or disadvantaged in any way.

I understand that any data that the researcher extracts from the interview / focus group / for use in reports or published findings will not, under any circumstances, contain names or identifying characteristics.

I understand that I will be given a transcript of data concerning me for my approval before it is included in the write up of the research.

I understand that any information I provide is confidential, and that no information that could lead to the identification of any individual will be disclosed in any reports on the project, or to any other party.

I understand that data from the interview/focus group will be kept in a secure storage and accessible to the research team. I also understand that the data will be destroyed after a 5 year period unless I consent to it being used in future research.

Participant's name

Signature

Date

MONASH University

November 2006

Explanatory Statement - Student

Title: Theories and Practices of Learning in Educational Reform.

This information sheet is for you to keep.

My name is Esme Capp and I am conducting a research project with Marilyn Fleer a Professor in the Department of Education towards a PhD at Monash University. I will be writing a thesis of 100,000 words.

Who has been asked to participate?

The research project is a case study of your school and the learning that happens in it. Teachers in Years Prep, Three and Five have been invited to participate as have children in their home groups.

The goal of my research

I want to know what you think about school so we can make schools a better place for learning.

Your part will be to take part in an interview led by Year 5 students.

The interview questions will be:

Children: Year 3 & Year 5

What is your relationship with your teacher?

What is the motivation for you to learn at school?

What is the role of your teacher?

What is your role at school?

What is the role of your parent?

How do you learn at school?

How do you and your teacher communicate?

How does your parent know about your learning at school?

How do you know that you have learnt something?

Your answers to the questions will be recorded. Your name will not be noted against your comments.

At any time you may decide you do not want to take part.

Please complete the consent form if you would like to participate in the project.

Thank you.

Esmé M Capp

Esme Capp

Human Ethics Officer

Standing Committee on Ethics in Research Involving Humans (SCERH)

Building 3d

Research Office

Monash University VIC 3800

Tel: +61 3 9905 2052 Fax: +61 3 9905 1420 Email: scerh@adm.monash.edu.au

Appendix 3

Key concepts to be explored through relevant interests of the cohort of children, building upon their previous explorations.

To be developed using the Inquiry Research Project planner.

Big Ideas	**Year Prep**	**Year 1**	**Year 2**	**Year 3/4**	**Year 5/6**
Interdependence: Developing a sense of connectedness with other people, and systems, reflecting on and taking action to shape local and global communities. (SA CSAF)	Building a learning community (Question 2006 What gives you a sense of belonging?)	Wider community: My place in the community *(Project 2006: News room)*	Recognising and valuing difference: passions, personality, living things, cultures.	Social responsibility/ Citizenship: (2005: Community Projects, Reading room, PMP, Fish)	Political sustainability: Democracy, citizenship, youth, social responsibility, power (Canberra camp)
					Multiculturalism: pop culture, age culture, family culture, nationality. (Question 2006: How does your culture shape, influence your identity, life, family, community, school community?)
				Systems: Scientific/technological (communication, technological), social, local – political, economical (money - currency),	Systems: (STS, Science Drama Awards, TOM, Robotics)

Sustainability: is a systemic concept, relating to the continuity or dis-continuity of ecological, economic, socio-cultural and political aspects of the world.	Relationships: (Question 2005 How are the relationships of animals different to the relationships of humans?)	Cycles: life, school, personal, physical world *(Time Machine)*	Change: Scientific perspective: environmental, biological, physical, chemical, psychological. Social perspectives	History: Influences of the past, on the present and on the future. (2006: Dandenong History)	Futures Thinking Techno futures, global futures, social futures, environmental futures. (2005: Futures Forum)
				Ecosystems: Ecological footprint, geography, climate change, efficiency, life cycle analysis	Environmental Science: Community Project (Wilson's Prom Camp, 2004:Dandenong Creek, Web quest: Environmentally friendly House, Paintings)
Identity: Critically understanding and developing personal identity, group identity and relationships and acting to shape these. (SA CSAF)	Fantasy: Exploration of children's personal perceptions of the world and its impact on them.	Emerging Individuals: Interpersonal Intrapersonal	Exploring the Reality of my world: Questioning the probable, improbable, and the possible.	Emotions/feelings: in depth analysis	Exploring and extending boundaries. (Night of the Notables)
	Independence: personal responsibility			Meta-cognition: in depth analysis. (Habits of mind, Multiple Intelligences)	Analysis and shaping of self and impact on others.